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RECREATION OPPORTUNITY SPECTRUM  
USER PREFERENCE STUDY  
FOR THE  
GLENWOOD SPRINGS RESOURCE AREA

Report to the

Colorado State Office  
Bureau of Land Management  
Contract YA-512-CT9-177

Perry J. Brown  
and  
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College of Forestry and Natural Resources  
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Fort Collins, Colorado

May 1981

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## INTRODUCTION

The Bureau of Land Management has been experimenting with new recreation planning procedures derived from the recreation opportunity spectrum (ROS) concept (Brown, Driver, and McConnell 1978; Brown, Driver, Bruns, and McConnell 1979; Clark and Stankey 1979; Driver and Brown 1978). As part of these experiments, user preference information was collected for input to the planning process being used on the Glenwood Springs Resource Area (GSRA) in Colorado. Additionally, area use projections were made for the GSRA using a projection model developed for the 1980 Resource Planning Act (RPA) assessment, and an examination was made of information in the possession of the BLM. The results of these efforts are contained in this report.

The information developed during the study is useful when considering the demand component of the Recreation Opportunity Planning (ROP) process (Brown et al., 1978). The underlying premise of the planning process is that people participate in specific recreation activities in specific settings to realize desired experiences. This notion is applied using specific planning procedures to identify the supply of and demand for recreation opportunities. When considering demand, planners using the ROP process can use information on people's preferences for specific recreation activities, settings, and experiences. Such information is not the only information which they can use because there are other components to demand estimation, but information on tastes and preferences does help to identify the kinds of recreation that people desire and the kinds of areas which



people perceive best provide desired recreation opportunities. This same information can be used to suggest kinds of features to inventory in conducting a supply assessment. The idea is to assess supply for the things which people demand.

The purpose of this study was to collect and interpret information on users' preferences for recreation settings and experiences in the Glenwood Springs Resource Area in Colorado. The GSRA has about 260,000 hectares of public land containing several high-value recreation resources. The major ski resorts of Vail and Aspen and several other ski areas are within its boundaries, though located on private and national forest land. The upper Colorado River within the area is popular for river-rafting, presently servicing more than 35,000 users and over 30 commercial outfitters. Other popular recreational activities include off-road vehicle driving, kayaking and rafting on other rivers, hunting, fishing, camping, and hiking.

The area has been divided into 10 zones for which preference and use information are reported (see maps).<sup>1</sup> Zones 1 and 2 are in the Aspen and Glenwood Springs area, zones 3-6 are west of Glenwood Springs, and zones 7-10 are near Vail and along the upper Colorado River.

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<sup>1</sup>Large numbers and bold lines indicate zones used for analyses. Small numbers and lines indicate zones used for sampling.





## ACTIVITY, SETTING, AND EXPERIENCE PREFERENCES

An underlying premise of this research was that people participate in recreation activities in specific settings to realize desired recreation experiences. Recreation activities are what the people do, the settings are where they do these activities, and the experiences are why they do the activities in the settings. A recreation opportunity, therefore, is characterized by all three of these components and is the opportunity to participate in a specific activity, in a specific environment, to realize a predictable experience. While resource managers most directly deal with providing settings for recreation, they implicitly (and increasingly explicitly) are providing activity and experience opportunities. Management for settings implicitly is management for what people do and why they do it. Knowledge of preferences for all three components, therefore, should be useful in guiding decisions about what opportunities to provide and how to provide them. Such information will not give prescriptions for management, but will give an indication of the kind and amount of management which users perceive as appropriate.

### Activities

We have considered what recreationists do in an area as an indication of their activity preferences, given the present character of that area.<sup>2</sup>

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<sup>2</sup>These activity preferences assume that the present character of the Glenwood Springs Resource Area will be maintained and that different activity opportunities will not be provided. Therefore, participation in an activity is a measure of activity preference since it represents a choice among available alternative activity opportunities. This kind of preference does differ from those preferences measured for setting and experience opportunities



Respondents were asked to indicate the activities in which they participated by each zone (see maps) of the GSRA (Table 1) and it is apparent that they engage in a wide array of activities in each zone, while one, two, or three activities per zone are usually more prominent than the other activities. For instance, in zone 3, which contains Grass Valley Reservoir, respondents engaged in 15 of the 24 activities listed, but more people engaged in swimming/water play and sunbathing than in any other activities.

A more specific indication of activity preferences can be obtained by examining recreationists' most important activity by zone (Table 2). The dominant activity in zones 1 and 2 is stream fishing. Zones 3 through 6 have water-oriented activities as dominant, with some important hunting activity in zone 5. In zones 7, 8, and 9, stream fishing is again very important with auto camping important in zone 7 and rafting/tubing important in zone 8. In zone 10, rafting/tubing and sightseeing are important activities.

Participation in activities and those activities perceived as most important during the fall of 1979 are shown in Table 3. Photography, sightseeing, and picnicking were the most frequently done activities. Hunting, lake fishing, and camping were perceived as the most important activities. No division by zones was possible for these data because fall use of the GSRA was very low and not enough interviews were obtained to make subdivision of the data possible.

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because they were measured for both present and future alternatives. That is, for setting and experience opportunity preferences we ask people to choose among settings and experiences that might or might not have been currently present, where as for activity preferences we only dealt with what was in existence at the time of the survey. What this means is that the setting and experience preferences that were measured are for presently preferred activities in the GSRA.



Table 1. User activities by GSRA zone for summer 1979 (percent).<sup>1,2,3</sup>

Activity (N)	Zone									
	1 (15)	2 (11)	3 (23)	4 (24)	5 (3)	6 (10)	7 (7)	8 (16)	9 (42)	10 (17)
Camping near auto	2	9	8	15	0	5	12	11	15	12
Camping away from auto	0	0	0	0	0	0	0	0	1	2
Hiking/walking on trails	8	11	1	7	11	0	0	11	6	6
Hiking/walking off trails	6	2	4	4	11	0	8	2	4	6
Rafting/tubing	4	2	4	0	11	20	0	3	15	12
Fishing (stream)	13	13	2	15	11	5	23	18	17	2
Fishing (lake)	0	4	8	5	0	0	0	3	1	0
Swimming/water play	4	4	21	3	11	10	0	2	3	2
Sunbathing	6	2	18	4	0	10	4	2	4	4
Picnicking	8	4	9	12	0	10	12	7	5	8
Sightseeing	8	9	5	7	0	10	12	9	7	12
4-wheel driving	6	2	4	3	0	0	8	2	3	0
Motorcycling	0	0	1	0	0	0	0	0	0	2
Bicycling	2	2	0	0	0	0	0	2	1	0
Horseback riding	2	0	0	1	0	5	4	0	1	2
Technical mountain climbing	0	2	0	0	0	0	0	0	1	0
Nature study	2	4	2	4	0	0	4	7	3	2
History study	2	4	0	0	0	0	0	0	1	0
Photography	8	9	1	4	11	10	8	12	5	14
Gathering forest products	2	2	0	1	0	0	0	2	0	0
Prospecting/rock hounding	2	0	0	1	0	0	0	2	1	0
Hunting	0	0	0	2	11	0	0	2	0	0
Auto driving for recreation	4	9	4	6	0	5	8	5	3	6
Kayaking	4	0	0	1	11	0	0	0	1	4
Other	7	6	8	4	11	10	0	0	1	4

<sup>1</sup>Data from mailback questionnaire.

<sup>2</sup>Percentages might not add up to 100 due to rounding.

<sup>3</sup>Results are based on the question, "Last summer you were contacted by one of our interviewers while you were recreating in the Glenwood Springs Resource Area. Please indicate which of the following activities you engaged in within the area where you were contacted."



Table 2. Most important activity by GSRA zone for summer 1979 (percent).<sup>1,2,3</sup>

Activity (N)	Zone									
	1 (14)	2 (11)	3 (23)	4 (24)	5 (3)	6 (9)	7 (6)	8 (16)	9 (42)	10 (17)
Camping near auto				25			33	6	12	12
Camping away from auto									5	
Hiking/walking on trails	14	9						13	5	12
Hiking/walking off trails				8	33					
Rafting/tubing		9				44		6	36	29
Fishing (stream)	36	36	9	25			50	50	36	
Fishing (lake)		9	13							
Swimming/water play	7	9	39							
Sunbathing						11				
Picnicking	7			8				6	2	
Sightseeing	14	9	4	4		11				24
4-wheel driving				4			17			
Motorcycling										6
Bicycling								6		
Horseback riding				4		11				
Technical mountain climbing		9								
Nature study								6		
Photography						11				
Gathering forest products								6		
Prospecting/rock hounding									2	
Hunting				13	33				2	
Auto driving for recreation		9		4						
Kayaking	14				33					12
Other	7		35	4		11				6

<sup>1</sup>Data from on-site questionnaire.

<sup>2</sup>Users often participate in more than one activity while visiting the GSRA.

<sup>3</sup>Results are based on the question, "Different types of outdoor recreation opportunities provide users with different types of experiences. Managers of the Glenwood Springs Resource Area would like to know what adds to or detracts from the level of satisfaction you get from visiting that area. Because people's preferences change for different activities these questions should be answered with only one activity in mind. This should be the activity you engaged in most while in the area where you were contacted by our interviewer. Please list that one activity here \_\_\_\_\_ (one activity)."





Table 3. User activities for entire GSRA for fall 1979 (percent).<sup>1,3</sup>

Activity	Participating <sup>2</sup> (N=18)	Most Important Activity (N=18)
Camping near auto	44	11
Camping away from auto	17	6
Hiking/walking on trails	39	6
Hiking/walking off trails	33	0
Rafting/tubing	6	0
Fishing (stream)	17	6
Fishing (lake)	39	22
Swimming/water play	17	6
Sunbathing	17	0
Picnicking	50	0
Sightseeing	61	0
4-wheel driving	33	6
Motorcycling	22	0
Bicycling	0	0
Horseback riding	22	0
Technical mountain climbing	6	0
Nature study	11	6
History study	11	0
Photography	67	0
Gathering forest products	33	0
Prospecting/rock hounding	0	0
Hunting (deer)	28	17
Hunting (elk)	28	11
Hunting (other)	11	0
Auto driving for recreation	39	6
Canoeing	6	0
Kayaking	6	0
Other (reading)	6	0

<sup>1</sup>Data from on-site questionnaire.

<sup>2</sup>Users often participate in more than one activity while visiting the GSRA.

<sup>3</sup>Results are based on the question, "Please check all of the activities you have engaged in during this visit to the Glenwood Springs Resource Area."



### Setting Preferences

Preferences for recreation settings were examined in two different ways: for the total setting and for individual attributes of the settings. The setting attributes included are those used in the Recreation Opportunity Planning process. Preferences for settings were elicited in reference to a recreationist's most important activity. Therefore, these setting preferences are for possible settings in which currently undertaken activities might occur.

For the GSRA the most favorable settings were the primitive, semi-primitive non-motorized, and semi-primitive motorized (Table 4). This pattern was indicated for all zones except 2, 4, and 7 where the roaded natural setting also was viewed quite favorably.

The setting preferences sometimes match and sometimes do not match the current ROP zones within the study area. For instance, most of zone 7 has a semi-primitive motorized ROP zone, and the setting with the highest preference rating is the semi-primitive motorized setting. Alternatively, most of zone 8 has a roaded natural ROP zone and the settings with the highest preference ratings are the primitive, semi-primitive non-motorized and semi-primitive motorized settings. The information in Table 4 is insufficient to interpret this and similar findings since many factors, including recreationists' most important activities, the specific location of activity engagement, and preferences for changing present settings, are likely contributors to the finding. Nonetheless, recreationists do not prefer to participate in their activities in semi-rural zones (as defined by ROP). The generally negative rating of the semi-rural zone (except by users in zone 4 whose rating was neutral) is likely a reflection of the semi-rural zone's character being quite a departure from characteristics preferred by most GSRA users for their present preferred activities. This ROP zone, with its considerable modification of the environment, including



Table 4. Setting preference means and standard deviations by zone.<sup>1,2,3</sup>

Zone	(N)	Settings						SR			
		P		SPNM		SPM			RN		
		Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)				
1	(15)	2.00	(1.67)	1.93	(2.13)	1.50	(1.91)	0.43	(2.34)	-1.50	(2.06)
2	(11)	1.30	(1.95)	1.50	(1.96)	1.12	(1.89)	1.22	(1.09)	-0.78	(2.17)
3	(23)	1.35	(1.84)	1.50	(1.85)	1.30	(1.34)	0.74	(1.70)	-2.17	(1.51)
4	(24)	1.91	(1.37)	1.64	(1.47)	1.59	(1.33)	1.59	(1.62)	0.27	(2.31)
5	(3)	2.00	(1.73)	1.67	(1.53)	1.00	(1.00)	0.00	(1.00)	-2.67	(0.58)
6	(10)	2.67	(0.71)	2.67	(0.50)	2.00	(0.93)	0.56	(1.42)	-1.00	(2.24)
7	(7)	1.71	(1.80)	1.71	(1.80)	2.17	(0.75)	1.14	(2.34)	-2.57	(0.79)
8	(16)	1.75	(1.81)	1.37	(1.63)	0.81	(1.68)	0.35	(1.78)	-1.00	(2.21)
9	(42)	1.57	(1.88)	1.62	(1.46)	1.52	(1.49)	0.74	(2.04)	-1.37	(2.09)
10	(17)	2.20	(1.57)	1.73	(1.67)	1.31	(1.25)	0.20	(1.90)	-1.60	(1.77)
Total GSRA	(168)	1.77	(1.68)	1.68	(1.61)	1.33	(1.47)	0.77	(1.86)	-1.25	(2.09)

<sup>1</sup>Responses were measured on a scale from +3 (very favorable) to -3 (very unfavorable).

<sup>2</sup>Data from mailback questionnaire.

<sup>3</sup>Results are based on the question, "Now please rate how favorable or unfavorable each of the 5 total recreation settings is for your activity in the Glenwood Springs Resource Area. Give us your overall evaluation of each of the 5 settings."



some possible urban development, is likely to be too developed for most recreation activities pursued in the GSRA and also represents conditions more developed than presently occur over most of the GSRA. It appears that users would like the recreation settings provided to be generally natural, without large numbers of other people, and without unnecessary facilities and regulations. Therefore, BLM lands in zones 1, 3, 5, 6, 8, 9, and 10 might be managed with fewer environmental modifications and with less encroachment by motorized vehicles than zones 2, 4, and 7, independent of their present ROP zone.

More than one setting is perceived as appropriate by recreationists engaging in many of the activities (Table 5). But, for some activities, such as kayaking, one setting (primitive) is clearly preferred. Also, while the semi-rural setting is viewed as unfavorable for most activities, it is viewed favorably for picnicking.

Fall users of the GSRA had preferences for the primitive, semi-primitive non-motorized, and semi-primitive motorized settings (Table 6). Fall lake fishermen evaluated the primitive setting as most favorable, and fall hunters evaluated the semi-primitive non-motorized settings as most favorable.

The second way we looked at settings was in terms of their individual attributes. Users were asked to indicate whether they liked or disliked each attribute, or if it was unimportant, for their most important activity (Table 7).

Overall, most people indicated that being a little distance ( $> 1/2$  mile) from roads, or in areas where there was some opportunity to be away from roads, was desirable. Many people would like to be quite remote ( $> 3$  miles from roads) and fewer than one-third of the users felt that being right along roads was desirable when participating in their most important activity.





Table 5. Setting preference means and standard deviations by activity.<sup>1,2,3</sup>

Activity	(N)	P		SPNM		SPM		RN		SR	
		Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)
Camping near auto	(16)	1.36	(1.74)	1.71	(1.68)	1.36	(1.65)	1.86	(1.70)	-0.79	(2.42)
Camping away from auto	(2)	3.00	(0.00)	3.00	(0.00)	2.50	(0.71)	-2.00	(1.41)	-2.50	(0.71)
Hiking/walking on trails	(9)	2.67	(0.71)	2.00	(1.23)	1.00	(1.58)	-0.22	(1.56)	-2.33	(0.71)
Hiking/walking off trails	(3)	3.00	(0.00)	2.33	(0.58)	2.00	(0.00)	0.67	(1.53)	-1.33	(2.89)
Rafting/tubing	(26)	1.75	(1.98)	1.71	(1.27)	1.61	(0.99)	0.53	(1.95)	-1.87	(1.71)
Fishing (stream)	(43)	1.80	(1.76)	1.67	(1.69)	1.54	(1.61)	0.64	(1.92)	-1.40	(1.98)
Fishing (lake)	(4)	2.00	(0.00)	2.00	(0.00)	2.00	(0.00)	1.50	(0.58)	-1.33	(2.89)
Swimming/water play	(11)	1.70	(1.25)	1.70	(1.34)	1.45	(1.13)	0.45	(1.42)	-2.00	(1.12)
Picnicking	(5)	1.60	(1.67)	1.60	(1.34)	2.00	(1.00)	1.80	(2.17)	1.60	(2.61)
Sightseeing	(11)	1.67	(1.32)	2.11	(1.27)	2.00	(0.87)	1.33	(1.32)	0.00	(1.66)
4-wheel driving	(2)	1.50	(2.12)	1.50	(2.12)	1.50	(2.12)	0.50	(0.71)	-1.50	(2.12)
Horseback riding	(2)	3.00	(0.00)	1.50	(2.12)	--	--	1.00	(2.83)	0.00	(4.24)
Hunting	(5)	1.25	(0.96)	0.80	(1.30)	1.00	(2.00)	1.50	(1.00)	-0.25	(2.63)
Kayaking	(5)	2.67	(0.58)	1.00	(3.46)	0.00	(2.65)	-1.50	(1.92)	-2.00	(1.00)
Other	(12)	1.33	(2.19)	1.42	(2.23)	1.17	(1.64)	0.75	(2.22)	-1.50	(2.20)

<sup>1</sup>Data from mailback questionnaire.

<sup>2</sup>Responses were scored on a 7 point scale ranging from +3 (very favorable) to -3 (very unfavorable).

<sup>3</sup>Results are based on the question, "Now please rate how favorable each of the 5 total recreation settings is for your activity in the Glenwood Springs Resource Area. Give us your overall evaluation of each of the 5 settings."



Table 6. Means and standard deviations for setting preferences for all fall users and for those indicating either lake fishing or hunting as most important.<sup>1,2,3</sup>

Setting	All Users		Lake Fishermen		Hunters (deer)	
	Mean	(S.D.)	Mean	(S.D.)	Mean	(S.D.)
P	1.94	(.94)	2.50	(.58)	2.33	(.58)
SPNM	2.00	(.84)	2.00	(.82)	3.00	(.00)
SPM	1.89	(.90)	2.00	(.82)	2.33	(1.15)
RN	0.94	(1.10)	0.75	(1.35)	1.33	(.58)
SR	-1.39	(1.79)	-1.00	(1.41)	-0.33	(3.05)
	(N=18)		(N=4)		(N=3)	

<sup>1</sup>Data from on-site questionnaire.

<sup>2</sup>Responses were measured on a scale from +3, very favorable, to -3, very unfavorable.

<sup>3</sup>Results are based on the question, "How favorable is each of these settings for your recreation activity in the Glenwood Springs Resource Area? Give us your overall evaluation of each of the five settings."



Table 7. Evaluation of setting attributes by setting for GSRA (percent).<sup>1,2,3</sup>

	(N)	Like	Unimportant	Dislike
<u>Primitive</u>				
Remote usually greater than 3 miles from roads	(160)	58	28	15
Unmodified natural environment over 5,000 acres	(158)	74	23	3
Very little concentration of evidence of other users	(160)	79	18	3
Very low user density providing very few contacts with other users	(159)	76	21	3
Managed without on-site regulation of users	(158)	59	26	15
Free of most facilities	(159)	60	25	14
Free of any resource uses which significantly disturb the natural environment	(161)	82	14	4
Free of motorized use	(162)	51	29	20
<u>Semi-Primitive Non-Motorized</u>				
Moderately remote, usually greater than ½ mile from roads	(155)	71	19	10
Predominately unmodified natural environment of over 2,500 acres	(155)	75	23	2
Little, but some concentration or evidence of other users	(155)	63	26	11
Low user density providing few, but some, contact with other users	(156)	66	29	6
Managed with minimum on-site regulation of users	(156)	56	29	15
A few facilities are provided for resource protection and safety of users	(154)	69	22	9
Free of most resource uses which significantly disturb the natural environment	(156)	81	14	5
Free of motorized use	(156)	54	25	20
<u>Semi-Primitive Motorized</u>				
Moderately remote, usually greater than ½ mile from roads	(153)	70	20	11
Predominately unmodified natural environment of over 2,500 acres	(152)	75	23	2
Little, but some concentration or evidence of other users	(153)	63	27	10
Low user density providing few, but some, contacts with other users	(151)	68	27	5
Managed with minimum on-site regulation of users	(153)	63	27	11
A few facilities are provided for resource protection and safety of users	(148)	68	24	6
Free of most resource uses which significantly disturb the natural environment	(150)	81	17	3
Motorized use is allowed but generally restricted to 4-wheel drive vehicles and off-road motorcycles	(155)	36	22	42
<u>Roaded Natural</u>				
Some of area remote, some along roads	(152)	72	20	8
Environment appears to be generally natural	(153)	90	6	3
Moderate concentration of users occurs and there are noticeable evidences of other users	(151)	30	25	45
Contacts with other users are expected, but not constant	(151)	52	34	15
Managed with on-site regulation of users	(151)	39	25	36
Rustic facilities available for resource protection and convenience and safety of users	(153)	60	28	12
Resource uses like timbering and grazing might be evident	(151)	29	46	26
Automobile use is allowed and common	(151)	30	27	44
<u>Semi-Rural</u>				
Area is along roads	(153)	31	24	45
Environment is substantially modified from natural with some urban type developments	(154)	11	16	73
Concentration of users is high and there are noticeable evidences of other users	(153)	7	15	78
Contacts with other users are frequent	(152)	10	21	69
Managed with on-site regulations of users	(152)	28	30	43
Modern, high standard, and generally large facilities are provided for users	(154)	20	19	62
Resource uses allowed include timbering, grazing, water development and tourist and shopping areas	(153)	7	18	75
Automobile use is allowed and common	(154)	25	23	52

<sup>1</sup>Data from mailback questionnaire.

<sup>2</sup>Percentages may not add to 100 due to rounding.

<sup>3</sup>Results based on the question, "A wide variety of recreation settings or environments can be provided by resource managers. Below are five lists of items which describe five settings in which you might engage in recreation activities. For the activity you listed in Section 2 of this questionnaire, indicate whether you would like, dislike, or don't care about the condition described by each item in each list."



Recreating in an environment which appears to be generally natural seems sufficient. A lot of users indicated a dislike for environments that are substantially modified from the natural and containing some urban type developments.

Users like not having very many other users around and also like few contacts with other recreation groups. Some regulation of user behavior seems to be okay. Rustic facilities for resource protection and safety of users is generally liked, and modern, high standard, and generally large facilities are disliked.

Users favor environments which do not contain resource uses which significantly disturb the natural environment and have a particularly strong reaction against urbanizing types of developments. About one-half of the users like the area in which they are recreating to not have motor vehicle use while the other one-half likes or is indifferent to motor vehicle use.

As one would expect from the overall ratings for settings, users liked the characteristics of the primitive, semi-primitive non-motorized, and semi-primitive motorized environments; users liked the remoteness, natural environment, frequency of contact with others, and facility characteristics of the roaded natural environment, but generally were indifferent to or disliked concentration and other evidence of use, allowance of motorized use, and existence of other resource use characteristics of the roaded natural environment; users were indifferent to or disliked all of the characteristics of the semi-rural environment.

Whether setting attributes were liked or disliked was examined by geographic zone and by most important activity, when there was a sufficient number of respondents to enable these analyses (Tables 8-23). Within a zone or activity, preferences for individual attributes vary between the





Table 8. Zone 1 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=15	Like	Unimportant	Dislike
Remoteness				
Primitive		50	29	21
Semi-Primitive Non-Motorized		64	29	7
Semi-Primitive Motorized		71	21	7
Roaded Natural		71	14	14
Semi-Rural		29	14	57
Naturalness of Environment				
Primitive		71	29	--
Semi-Primitive Non-Motorized		79	21	--
Semi-Primitive Motorized		79	21	--
Roaded Natural		93	7	--
Semi-Rural		--	14	86
Concentration of Users				
Primitive		93	7	--
Semi-Primitive Non-Motorized		64	21	14
Semi-Primitive Motorized		57	29	14
Roaded Natural		36	14	50
Semi-Rural		--	14	86
Contacts with Users				
Primitive		79	21	--
Semi-Primitive Non-Motorized		64	36	--
Semi-Primitive Motorized		64	29	7
Roaded Natural		21	64	14
Semi-Rural		--	21	79
Management Regulation				
Primitive		62	23	15
Semi-Primitive Non-Motorized		71	21	7
Semi-Primitive Motorized		79	14	7
Roaded Natural		43	21	36
Semi-Rural		14	43	43
Facilities				
Primitive		77	15	8
Semi-Primitive Non-Motorized		57	29	14
Semi-Primitive Motorized		54	39	8
Roaded Natural		57	29	14
Semi-Rural		14	7	79
Resource Uses				
Primitive		100	--	--
Semi-Primitive Non-Motorized		100	--	--
Semi-Primitive Motorized		100	--	--
Roaded Natural		14	43	43
Semi-Rural		--	14	86
Motorized Use				
Primitive		57	21	21
Semi-Primitive Non-Motorized		64	21	14
Semi-Primitive Motorized		29	14	57
Roaded Natural		29	--	71
Semi-Rural		29	7	64

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 9. Zone 2 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=11	Like	Unimportant	Dislike
Remoteness				
Primitive		30	50	20
Semi-Primitive Non-Motorized		80	10	10
Semi-Primitive Motorized		78	11	11
Roaded Natural		100	--	--
Semi-Rural		56	--	44
Naturalness of Environment				
Primitive		70	20	10
Semi-Primitive Non-Motorized		90	10	--
Semi-Primitive Motorized		89	11	--
Roaded Natural		100	--	--
Semi-Rural		11	11	78
Concentration of Users				
Primitive		70	30	--
Semi-Primitive Non-Motorized		80	20	--
Semi-Primitive Motorized		78	22	--
Roaded Natural		25	38	38
Semi-Rural		--	11	89
Contacts with Users				
Primitive		60	40	--
Semi-Primitive Non-Motorized		70	30	--
Semi-Primitive Motorized		67	33	--
Roaded Natural		50	50	--
Semi-Rural		11	11	78
Management Regulation				
Primitive		50	20	30
Semi-Primitive Non-Motorized		50	30	20
Semi-Primitive Motorized		60	30	10
Roaded Natural		50	38	13
Semi-Rural		13	13	75
Facilities				
Primitive		64	27	9
Semi-Primitive Non-Motorized		64	40	--
Semi-Primitive Motorized		56	44	--
Roaded Natural		75	25	--
Semi-Rural		11	22	67
Resource Uses				
Primitive		73	18	9
Semi-Primitive Non-Motorized		73	18	9
Semi-Primitive Motorized		80	10	10
Roaded Natural		50	50	--
Semi-Rural		--	22	78
Motorized Use				
Primitive		46	46	9
Semi-Primitive Non-Motorized		55	27	18
Semi-Primitive Motorized		30	50	20
Roaded Natural		50	50	--
Semi-Rural		40	40	20

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 10. Zone 3 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=23	Like	Unimportant	Dislike
Remoteness				
Primitive		57	14	29
Semi-Primitive Non-Motorized		67	14	19
Semi-Primitive Motorized		64	14	23
Roaded Natural		74	11	16
Semi-Rural		25	30	45
Naturalness of Environment				
Primitive		67	33	--
Semi-Primitive Non-Motorized		71	29	--
Semi-Primitive Motorized		76	24	--
Roaded Natural		85	10	5
Semi-Rural		10	30	60
Concentration of Users				
Primitive		68	18	14
Semi-Primitive Non-Motorized		62	29	10
Semi-Primitive Motorized		68	27	5
Roaded Natural		33	19	48
Semi-Rural		--	5	95
Contacts with Users				
Primitive		75	15	10
Semi-Primitive Non-Motorized		62	33	5
Semi-Primitive Motorized		71	29	9
Roaded Natural		76	24	--
Semi-Rural		10	15	75
Management Regulation				
Primitive		52	33	14
Semi-Primitive Non-Motorized		50	41	9
Semi-Primitive Motorized		52	38	10
Roaded Natural		38	33	29
Semi-Rural		25	50	25
Facilities				
Primitive		43	38	19
Semi-Primitive Non-Motorized		86	14	--
Semi-Primitive Motorized		68	32	--
Roaded Natural		71	29	--
Semi-Rural		10	30	60
Resource Uses				
Primitive		71	19	10
Semi-Primitive Non-Motorized		76	19	5
Semi-Primitive Motorized		76	24	--
Roaded Natural		29	57	14
Semi-Rural		--	15	85
Motorized Use				
Primitive		38	33	29
Semi-Primitive Non-Motorized		38	38	24
Semi-Primitive Motorized		55	23	23
Roaded Natural		35	30	35
Semi-Rural		20	30	50

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 11. Zone 4 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=24	Like	Unimportant	Dislike
Remoteness				
Primitive		35	39	26
Semi-Primitive Non-Motorized		48	38	14
Semi-Primitive Motorized		62	33	5
Roaded Natural		55	41	5
Semi-Rural		41	27	32
Naturalness of Environment				
Primitive		50	41	9
Semi-Primitive Non-Motorized		48	48	5
Semi-Primitive Motorized		57	43	--
Roaded Natural		86	14	--
Semi-Rural		23	23	55
Concentration of Users				
Primitive		68	32	--
Semi-Primitive Non-Motorized		55	41	5
Semi-Primitive Motorized		67	29	5
Roaded Natural		38	33	29
Semi-Rural		27	18	56
Contacts with Users				
Primitive		57	39	4
Semi-Primitive Non-Motorized		64	36	--
Semi-Primitive Motorized		76	24	--
Roaded Natural		52	38	10
Semi-Rural		18	46	36
Management Regulation				
Primitive		63	25	13
Semi-Primitive Non-Motorized		46	36	18
Semi-Primitive Motorized		71	19	10
Roaded Natural		43	29	29
Semi-Rural		32	41	27
Facilities				
Primitive		50	27	23
Semi-Primitive Non-Motorized		60	25	15
Semi-Primitive Motorized		65	20	15
Roaded Natural		67	19	14
Semi-Rural		36	27	36
Resource Uses				
Primitive		67	25	8
Semi-Primitive Non-Motorized		64	32	5
Semi-Primitive Motorized		60	40	--
Roaded Natural		48	33	19
Semi-Rural		23	23	55
Motorized Use				
Primitive		42	38	21
Semi-Primitive Non-Motorized		36	36	27
Semi-Primitive Motorized		38	33	29
Roaded Natural		43	33	24
Semi-Rural		46	23	32

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.





Table 12. Zone 5 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=3	Like	Unimportant	Dislike
Remoteness				
Primitive		67	33	--
Semi-Primitive Non-Motorized		33	67	--
Semi-Primitive Motorized		100	--	--
Roaded Natural		33	33	33
Semi-Rural		--	33	67
Naturalness of Environment				
Primitive		67	33	--
Semi-Primitive Non-Motorized		67	33	--
Semi-Primitive Motorized		67	33	--
Roaded Natural		67	33	--
Semi-Rural		--	--	100
Concentration of Users				
Primitive		67	33	--
Semi-Primitive Non-Motorized		67	33	--
Semi-Primitive Motorized		67	33	--
Roaded Natural		--	33	67
Semi-Rural		--	--	100
Contacts with Users				
Primitive		67	33	--
Semi-Primitive Non-Motorized		33	67	--
Semi-Primitive Motorized		--	100	--
Roaded Natural		--	33	67
Semi-Rural		33	--	67
Management Regulation				
Primitive		67	33	--
Semi-Primitive Non-Motorized		33	33	33
Semi-Primitive Motorized		33	33	33
Roaded Natural		33	33	33
Semi-Rural		--	67	33
Facilities				
Primitive		67	33	--
Semi-Primitive Non-Motorized		33	33	33
Semi-Primitive Motorized		33	33	33
Roaded Natural		67	--	33
Semi-Rural		--	--	100
Resource Uses				
Primitive		67	33	--
Semi-Primitive Non-Motorized		67	33	--
Semi-Primitive Motorized		67	33	--
Roaded Natural		33	67	--
Semi-Rural		--	--	100
Motorized Use				
Primitive		100	--	--
Semi-Primitive Non-Motorized		100	--	--
Semi-Primitive Motorized		--	--	100
Roaded Natural		--	--	100
Semi-Rural		--	--	100

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 13. Zone 6 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=10	Like	Unimportant	Dislike
<b>Remoteness</b>				
Primitive		78	22	--
Semi-Primitive Non-Motorized		100	--	--
Semi-Primitive Motorized		78	22	--
Roaded Natural		67	22	11
Semi-Rural		40	40	20
<b>Naturalness of Environment</b>				
Primitive		89	11	--
Semi-Primitive Non-Motorized		89	11	--
Semi-Primitive Motorized		89	11	--
Roaded Natural		89	--	11
Semi-Rural		30	--	70
<b>Concentration of Users</b>				
Primitive		80	20	--
Semi-Primitive Non-Motorized		67	22	11
Semi-Primitive Motorized		67	22	11
Roaded Natural		44	--	56
Semi-Rural		11	11	78
<b>Contacts with Users</b>				
Primitive		60	40	--
Semi-Primitive Non-Motorized		70	30	--
Semi-Primitive Motorized		78	22	--
Roaded Natural		67	22	11
Semi-Rural		33	22	44
<b>Management Regulation</b>				
Primitive		44	22	33
Semi-Primitive Non-Motorized		70	30	--
Semi-Primitive Motorized		78	22	--
Roaded Natural		33	22	44
Semi-Rural		33	11	56
<b>Facilities</b>				
Primitive		70	10	20
Semi-Primitive Non-Motorized		78	11	11
Semi-Primitive Motorized		88	--	13
Roaded Natural		44	33	22
Semi-Rural		44	11	44
<b>Resource Uses</b>				
Primitive		89	11	--
Semi-Primitive Non-Motorized		89	11	--
Semi-Primitive Motorized		100	--	--
Roaded Natural		22	44	33
Semi-Rural		22	11	67
<b>Motorized Use</b>				
Primitive		60	20	20
Semi-Primitive Non-Motorized		70	10	20
Semi-Primitive Motorized		56	--	44
Roaded Natural		22	22	56
Semi-Rural		22	44	33

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 14. Zone 7 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=7	Like	Unimportant	Dislike
Remoteness				
Primitive		71	14	14
Semi-Primitive Non-Motorized		71	14	14
Semi-Primitive Motorized		57	29	14
Roaded Natural		86	14	--
Semi-Rural		--	33	67
Naturalness of Environment				
Primitive		86	14	--
Semi-Primitive Non-Motorized		71	29	--
Semi-Primitive Motorized		86	--	14
Roaded Natural		100	--	--
Semi-Rural		--	14	86
Concentration of Users				
Primitive		71	29	--
Semi-Primitive Non-Motorized		57	43	--
Semi-Primitive Motorized		71	29	--
Roaded Natural		43	29	29
Semi-Rural		--	--	100
Contacts with Users				
Primitive		71	14	14
Semi-Primitive Non-Motorized		57	14	29
Semi-Primitive Motorized		86	14	--
Roaded Natural		71	29	--
Semi-Rural		--	--	100
Management Regulation				
Primitive		43	29	29
Semi-Primitive Non-Motorized		57	29	14
Semi-Primitive Motorized		71	29	--
Roaded Natural		43	14	43
Semi-Rural		43	14	43
Facilities				
Primitive		43	29	29
Semi-Primitive Non-Motorized		57	29	14
Semi-Primitive Motorized		86	14	--
Roaded Natural		100	--	--
Semi-Rural		29	--	71
Resource Uses				
Primitive		86	14	--
Semi-Primitive Non-Motorized		71	--	29
Semi-Primitive Motorized		100	--	--
Roaded Natural		57	29	14
Semi-Rural		--	--	100
Motorized Use				
Primitive		14	29	57
Semi-Primitive Non-Motorized		43	14	43
Semi-Primitive Motorized		57	14	29
Roaded Natural		29	29	43
Semi-Rural		14	29	57

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 15. Zone 8 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=16	Like	Unimportant	Dislike
Remoteness				
Primitive		69	25	6
Semi-Primitive Non-Motorized		86	7	7
Semi-Primitive Motorized		80	13	7
Roaded Natural		87	7	7
Semi-Rural		29	29	43
Naturalness of Environment				
Primitive		81	19	--
Semi-Primitive Non-Motorized		73	27	--
Semi-Primitive Motorized		73	27	--
Roaded Natural		87	13	--
Semi-Rural		13	7	80
Concentration of Users				
Primitive		87	12	--
Semi-Primitive Non-Motorized		67	20	13
Semi-Primitive Motorized		67	20	13
Roaded Natural		20	40	40
Semi-Rural		--	13	87
Contacts with Users				
Primitive		94	6	--
Semi-Primitive Non-Motorized		80	13	7
Semi-Primitive Motorized		67	27	7
Roaded Natural		60	13	27
Semi-Rural		--	21	79
Management Regulation				
Primitive		63	19	19
Semi-Primitive Non-Motorized		53	33	13
Semi-Primitive Motorized		60	27	13
Roaded Natural		40	20	40
Semi-Rural		40	7	53
Facilities				
Primitive		50	38	13
Semi-Primitive Non-Motorized		73	13	13
Semi-Primitive Motorized		80	7	13
Roaded Natural		60	20	20
Semi-Rural		27	--	73
Resource Uses				
Primitive		88	6	6
Semi-Primitive Non-Motorized		87	7	7
Semi-Primitive Motorized		79	14	7
Roaded Natural		36	21	43
Semi-Rural		13	7	80
Motorized Use				
Primitive		69	49	71
Semi-Primitive Non-Motorized		60	20	20
Semi-Primitive Motorized		33	7	60
Roaded Natural		27	20	53
Semi-Rural		27	7	67

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.





Table 16. Zone 9 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=42	Like	Unimportant	Dislike
Remoteness				
Primitive		65	30	5
Semi-Primitive Non-Motorized		74	18	8
Semi-Primitive Motorized		65	24	11
Roaded Natural		69	26	5
Semi-Rural		31	48	21
Naturalness of Environment				
Primitive		77	18	5
Semi-Primitive Non-Motorized		76	21	3
Semi-Primitive Motorized		70	27	3
Roaded Natural		92	8	--
Semi-Rural		8	18	74
Concentration of Users				
Primitive		82	18	--
Semi-Primitive Non-Motorized		60	30	11
Semi-Primitive Motorized		60	30	11
Roaded Natural		27	27	46
Semi-Rural		8	24	68
Contacts with Users				
Primitive		80	18	3
Semi-Primitive Non-Motorized		58	27	5
Semi-Primitive Motorized		61	31	8
Roaded Natural		46	35	19
Semi-Rural		3	21	71
Management Regulation				
Primitive		61	26	13
Semi-Primitive Non-Motorized		58	22	19
Semi-Primitive Motorized		60	30	11
Roaded Natural		35	19	46
Semi-Rural		26	26	47
Facilities				
Primitive		64	26	10
Semi-Primitive Non-Motorized		63	29	8
Semi-Primitive Motorized		65	27	8
Roaded Natural		46	41	13
Semi-Rural		10	26	64
Resource Uses				
Primitive		80	18	3
Semi-Primitive Non-Motorized		84	16	--
Semi-Primitive Motorized		31	19	--
Roaded Natural		16	55	29
Semi-Rural		3	29	68
Motorized Use				
Primitive		49	36	15
Semi-Primitive Non-Motorized		56	31	14
Semi-Primitive Motorized		32	29	40
Roaded Natural		26	31	27
Semi-Rural		18	26	56

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 17. Zone 10 users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=17	Like	Unimportant	Dislike
Remoteness				
Primitive		65	18	18
Semi-Primitive Non-Motorized		77	12	12
Semi-Primitive Motorized		81	6	13
Roaded Natural		80	13	7
Semi-Rural		25	19	56
Naturalness of Environment				
Primitive		94	6	--
Semi-Primitive Non-Motorized		94	6	--
Semi-Primitive Motorized		88	6	--
Roaded Natural		86	--	14
Semi-Rural		6	6	88
Concentration of Users				
Primitive		94	6	--
Semi-Primitive Non-Motorized		71	--	29
Semi-Primitive Motorized		50	25	25
Roaded Natural		19	19	63
Semi-Rural		6	19	75
Contacts with Users				
Primitive		94	6	--
Semi-Primitive Non-Motorized		65	18	18
Semi-Primitive Motorized		69	13	19
Roaded Natural		44	31	25
Semi-Rural		6	13	81
Management Regulation				
Primitive		71	29	--
Semi-Primitive Non-Motorized		65	18	18
Semi-Primitive Motorized		56	25	19
Roaded Natural		38	31	31
Semi-Rural		31	25	44
Facilities				
Primitive		77	18	6
Semi-Primitive Non-Motorized		88	6	6
Semi-Primitive Motorized		79	14	7
Roaded Natural		56	31	13
Semi-Rural		19	19	63
Resource Uses				
Primitive		100	--	--
Semi-Primitive Non-Motorized		88	6	6
Semi-Primitive Motorized		81	6	13
Roaded Natural		25	50	25
Semi-Rural		--	19	81
Motorized Use				
Primitive		71	12	18
Semi-Primitive Non-Motorized		71	12	18
Semi-Primitive Motorized		19	12	69
Roaded Natural		20	27	53
Semi-Rural		13	20	67

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 18. Camping near auto users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=16	Like	Unimportant	Dislike
Remoteness				
Primitive		20	33	47
Semi-Primitive Non-Motorized		50	14	36
Semi-Primitive Motorized		43	29	29
Roaded Natural		79	21	--
Semi-Rural		50	21	29
Naturalness of Environment				
Primitive		73	20	7
Semi-Primitive Non-Motorized		77	23	--
Semi-Primitive Motorized		71	21	7
Roaded Natural		92	--	8
Semi-Rural		7	21	71
Concentration of Users				
Primitive		60	40	--
Semi-Primitive Non-Motorized		64	21	14
Semi-Primitive Motorized		64	21	14
Roaded Natural		43	29	29
Semi-Rural		14	21	64
Contacts with Users				
Primitive		73	20	7
Semi-Primitive Non-Motorized		79	14	7
Semi-Primitive Motorized		71	21	7
Roaded Natural		57	36	7
Semi-Rural		14	29	57
Management Regulation				
Primitive		44	25	31
Semi-Primitive Non-Motorized		71	14	14
Semi-Primitive Motorized		64	14	21
Roaded Natural		50	7	43
Semi-Rural		43	21	36
Facilities				
Primitive		50	25	25
Semi-Primitive Non-Motorized		92	--	8
Semi-Primitive Motorized		92	--	8
Roaded Natural		79	14	7
Semi-Rural		29	14	57
Resource Uses				
Primitive		75	25	--
Semi-Primitive Non-Motorized		79	7	14
Semi-Primitive Motorized		93	--	7
Roaded Natural		36	43	21
Semi-Rural		21	14	64
Motorized Use				
Primitive		50	6	44
Semi-Primitive Non-Motorized		50	7	43
Semi-Primitive Motorized		36	21	43
Roaded Natural		62	15	23
Semi-Rural		54	8	39

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 19. Hiking/walking users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=9	Like	Unimportant	Dislike
Remoteness				
Primitive		78	11	11
Semi-Primitive Non-Motorized		89	11	--
Semi-Primitive Motorized		100	--	--
Roaded Natural		78	11	11
Semi-Rural		11	33	56
Naturalness of Environment				
Primitive		89	11	--
Semi-Primitive Non-Motorized		89	11	--
Semi-Primitive Motorized		89	11	--
Roaded Natural		89	11	--
Semi-Rural		11	--	89
Concentration of Users				
Primitive		100	--	--
Semi-Primitive Non-Motorized		78	--	22
Semi-Primitive Motorized		78	--	22
Roaded Natural		22	--	78
Semi-Rural		11	--	89
Contacts with Users				
Primitive		89	11	--
Semi-Primitive Non-Motorized		89	--	11
Semi-Primitive Motorized		89	--	11
Roaded Natural		44	44	11
Semi-Rural		--	22	78
Management Regulation				
Primitive		44	33	22
Semi-Primitive Non-Motorized		89	11	--
Semi-Primitive Motorized		89	--	11
Roaded Natural		56	22	22
Semi-Rural		44	22	33
Facilities				
Primitive		67	22	11
Semi-Primitive Non-Motorized		78	22	--
Semi-Primitive Motorized		75	25	--
Roaded Natural		56	33	11
Semi-Rural		11	11	78
Resource Uses				
Primitive		100	--	--
Semi-Primitive Non-Motorized		100	--	--
Semi-Primitive Motorized		89	11	--
Roaded Natural		11	44	44
Semi-Rural		--	--	100
Motorized Use				
Primitive		100	--	--
Semi-Primitive Non-Motorized		100	--	--
Semi-Primitive Motorized		11	11	78
Roaded Natural		11	--	89
Semi-Rural		11	--	89

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.





Table 20. Rafting/tubing users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=26	Like	Unimportant	Dislike
Remoteness				
Primitive		80	12	8
Semi-Primitive Non-Motorized		84	8	8
Semi-Primitive Motorized		83	4	13
Roaded Natural		71	13	17
Semi-Rural		16	12	72
Naturalness of Environment				
Primitive		84	4	12
Semi-Primitive Non-Motorized		88	8	4
Semi-Primitive Motorized		83	13	4
Roaded Natural		96	--	4
Semi-Rural		4	4	92
Concentration of Users				
Primitive		84	12	4
Semi-Primitive Non-Motorized		70	17	13
Semi-Primitive Motorized		61	26	13
Roaded Natural		22	26	52
Semi-Rural		--	13	88
Contacts with Users				
Primitive		77	23	--
Semi-Primitive Non-Motorized		79	17	4
Semi-Primitive Motorized		64	27	9
Roaded Natural		52	22	26
Semi-Rural		8	13	79
Management Regulation				
Primitive		71	21	8
Semi-Primitive Non-Motorized		58	13	29
Semi-Primitive Motorized		52	26	22
Roaded Natural		35	22	44
Semi-Rural		9	22	70
Facilities				
Primitive		69	19	12
Semi-Primitive Non-Motorized		57	26	17
Semi-Primitive Motorized		50	32	18
Roaded Natural		33	42	25
Semi-Rural		13	17	71
Resource Uses				
Primitive		80	16	4
Semi-Primitive Non-Motorized		74	22	4
Semi-Primitive Motorized		70	22	9
Roaded Natural		17	50	33
Semi-Rural		4	21	75
Motorized Use				
Primitive		65	19	15
Semi-Primitive Non-Motorized		71	8	21
Semi-Primitive Motorized		39	26	35
Roaded Natural		17	29	54
Semi-Rural		8	25	67

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 21. Stream fishermen users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=43	Like	Unimportant	Dislike
Remoteness				
Primitive		56	34	9
Semi-Primitive Non-Motorized		79	18	3
Semi-Primitive Motorized		74	23	3
Roaded Natural		74	23	3
Semi-Rural		22	25	53
Naturalness of Environment				
Primitive		72	28	--
Semi-Primitive Non-Motorized		70	30	--
Semi-Primitive Motorized		71	26	3
Roaded Natural		95	5	--
Semi-Rural		11	16	74
Concentration of Users				
Primitive		80	20	--
Semi-Primitive Non-Motorized		65	25	10
Semi-Primitive Motorized		68	21	11
Roaded Natural		29	24	47
Semi-Rural		8	13	79
Contacts with Users				
Primitive		78	18	5
Semi-Primitive Non-Motorized		65	28	8
Semi-Primitive Motorized		71	24	5
Roaded Natural		45	32	24
Semi-Rural		5	16	78
Management Regulation				
Primitive		54	21	26
Semi-Primitive Non-Motorized		51	34	15
Semi-Primitive Motorized		66	32	3
Roaded Natural		45	21	34
Semi-Rural		40	24	37
Facilities				
Primitive		58	26	16
Semi-Primitive Non-Motorized		58	35	8
Semi-Primitive Motorized		65	32	3
Roaded Natural		58	32	11
Semi-Rural		18	18	63
Resource Uses				
Primitive		85	10	5
Semi-Primitive Non-Motorized		83	10	8
Semi-Primitive Motorized		84	14	3
Roaded Natural		30	43	27
Semi-Rural		5	16	79
Motorized Use				
Primitive		43	40	18
Semi-Primitive Non-Motorized		46	39	15
Semi-Primitive Motorized		31	23	46
Roaded Natural		21	37	42
Semi-Rural		18	26	55

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 22. Swimming/water play users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=11	Like	Unimportant	Dislike
Remoteness				
Primitive		78	11	11
Semi-Primitive Non-Motorized		78	11	11
Semi-Primitive Motorized		60	10	30
Roaded Natural		70	10	20
Semi-Rural		30	40	30
Naturalness of Environment				
Primitive		89	11	--
Semi-Primitive Non-Motorized		78	22	--
Semi-Primitive Motorized		100	--	--
Roaded Natural		91	--	9
Semi-Rural		10	40	50
Concentration of Users				
Primitive		78	--	22
Semi-Primitive Non-Motorized		67	22	11
Semi-Primitive Motorized		60	30	10
Roaded Natural		30	20	50
Semi-Rural		--	10	90
Contacts with Users				
Primitive		89	--	11
Semi-Primitive Non-Motorized		44	44	11
Semi-Primitive Motorized		60	40	--
Roaded Natural		60	40	--
Semi-Rural		20	10	70
Management Regulation				
Primitive		44	44	11
Semi-Primitive Non-Motorized		33	44	22
Semi-Primitive Motorized		46	46	9
Roaded Natural		40	30	30
Semi-Rural		20	50	30
Facilities				
Primitive		70	20	10
Semi-Primitive Non-Motorized		89	11	--
Semi-Primitive Motorized		80	20	--
Roaded Natural		70	30	--
Semi-Rural		10	20	70
Resource Uses				
Primitive		90	10	--
Semi-Primitive Non-Motorized		80	20	--
Semi-Primitive Motorized		70	30	--
Roaded Natural		40	40	50
Semi-Rural		--	--	100
Motorized Use				
Primitive		60	30	10
Semi-Primitive Non-Motorized		60	30	10
Semi-Primitive Motorized		73	18	9
Roaded Natural		30	30	40
Semi-Rural		36	27	36

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 23. Sightseeing users' like or dislike of setting attributes for each setting (percent).<sup>1,2</sup>

Attribute/Settings	N=11	Like	Unimportant	Dislike
Remoteness				
Primitive		44	33	22
Semi-Primitive Non-Motorized		67	33	--
Semi-Primitive Motorized		78	22	--
Roaded Natural		88	12	--
Semi-Rural		56	22	22
Naturalness of Environment				
Primitive		89	11	--
Semi-Primitive Non-Motorized		89	11	--
Semi-Primitive Motorized		67	33	--
Roaded Natural		100	--	--
Semi-Rural		22	--	78
Concentration of Users				
Primitive		89	11	--
Semi-Primitive Non-Motorized		78	22	--
Semi-Primitive Motorized		56	44	--
Roaded Natural		38	50	13
Semi-Rural		11	11	78
Contacts with Users				
Primitive		67	22	11
Semi-Primitive Non-Motorized		67	33	--
Semi-Primitive Motorized		78	11	11
Roaded Natural		63	38	--
Semi-Rural		22	22	56
Management Regulation				
Primitive		44	33	22
Semi-Primitive Non-Motorized		56	33	11
Semi-Primitive Motorized		67	22	11
Roaded Natural		38	50	13
Semi-Rural		56	22	22
Facilities				
Primitive		44	22	33
Semi-Primitive Non-Motorized		89	11	--
Semi-Primitive Motorized		89	11	--
Roaded Natural		75	25	--
Semi-Rural		44	33	22
Resource Uses				
Primitive		100	--	--
Semi-Primitive Non-Motorized		100	--	--
Semi-Primitive Motorized		89	--	11
Roaded Natural		38	50	13
Semi-Rural		11	56	33
Motorized Use				
Primitive		22	56	22
Semi-Primitive Non-Motorized		33	56	11
Semi-Primitive Motorized		11	44	44
Roaded Natural		29	43	29
Semi-Rural		33	44	22

<sup>1</sup>Data from mailback questionnaires.

<sup>2</sup>Percentages may not add to 100 due to rounding.





settings being considered. Also, those attributes which were liked or disliked, and thus probably salient for overall setting preferences, vary between zones and between activities. Comparison of these attribute ratings to the total setting ratings (Table 4) should be done cautiously because there are not significant differences between many of the total setting ratings, indicating there might be no clear preference. Also, there are not always significant differences between the attribute ratings for each setting and thus there is no single attribute condition that can be identified with each setting. What this means is that Tables 4 and 8-23 are useful for describing preferred attribute conditions when there were clear overall setting preferences (e.g., Table 17) and for depicting generally desirable conditions when clear overall setting preferences were not expressed (e.g., Table 11).

In summary of these tables (8-23), users of zones 1, 5, 6, 9, and 10 when engaging in their most important activity like some remoteness, prefer an environment that appears to be generally natural, like little concentration of users and low user density with few contacts between users, prefer minimum on-site regulation of users, like some rustic or no facilities at all, like an absence of most other resource uses that have a noticeable effect on the environment, and prefer no to low motorized use of the area. Users in zones 2 and 4 like some, but not a lot of remoteness; prefer a generally natural appearing environment; like low concentrations of users but find some contacts with other users desirable; prefer low, but some, on-site regulation of users; like rustic facilities; prefer no environment disturbing other resource uses, but will tolerate some; and feel that some motorized use of the area is acceptable. Users of zones, 3, 7, and 8 like some, but not a lot of, remoteness; prefer a generally natural appearing



environment; like low concentration of users but like some contacts with other users; prefer minimal on-site regulation of users; like some rustic facilities; do not like most other resource uses that are noticeable; and prefer low motorized use of the area.

Users participating in camping near their auto as their most important activity prefer having road access, a general natural appearing environment, low concentrations of users and few contacts with other users, minimal on-site regulation of users, some rustic facilities, no appearance of other resource uses, and motorized access. Users participating in hiking/walking, rafting/tubing, and stream fishing generally preferred the same attributes. These were remoteness from roads, a generally natural appearing environment, low concentrations of other users and low contacts with other users, few on-site management regulations, few but rustic facilities, no apparent other resource uses, and no to low motorized use. Fishermen and rafters were somewhat more liking of motorized use than were hikers. Users emphasizing swimming and water play consider some access desirable, but also like some remoteness; prefer a generally natural appearing environment; prefer low concentrations of users, but do like some contacts between users; like some on-site regulation of users and some rustic facilities; prefer no obvious other resource uses, but will accept some; and like low levels of motorized use. Sightseers prefer areas with road access; a generally natural appearing environment; low to no concentration of other users, but some contact with other users; some on-site user regulation; rustic facilities (with some liking modern facilities); little obvious evidence of other resource uses (but some is okay); and motorized use of the area.



The sharp contrast in attribute ratings between the roaded natural and semi-rural zones is noteworthy. It is likely due to the semi-rural zone's character being quite different from what is presently found over most of the GSRA, as explained earlier.

### Outcome Preferences

Preferences for outcomes from the recreation experiences were examined for all users, with users divided by zone of use and by the activity they specified as most important to them. Responses to possible psychological outcomes were reported on a scale ranging from "most strongly adds to satisfaction" (+4) to "most strongly detracts from satisfaction" (-4). Individual outcomes from the questionnaire were grouped into outcome domains (see Appendix E).

All of the outcome domains were rated as adding to the user's satisfaction (Table 24). "Relationships with nature" added most to satisfaction and "escape family" added least. Other outcome domains perceived as strongly contributing to satisfaction were achievement, leadership/autonomy, being with people, general learning, reflect on personal values, exercise/physical fitness, escape personal-social pressure, escape physical pressure, and family togetherness.

Outcome domain means are displayed for each zone in Table 25 and for most important activity in Table 26. These tables can be read by emphasizing either columns or rows. In Table 25, examining the columns reveals the relative importance of each outcome to the users of each zone, and examining the rows reveals the perceived differences in value for an outcome by users in different zones. In Table 26, examining the columns reveals the relative importance of each outcome to those users having a common most important activity and examining the rows reveals the perceived differences in value



Table 24. Outcome domain means and standard deviations.<sup>1</sup>

Outcome Domain	(N)	Mean <sup>2</sup>	S.D.
Achievement	(68)	3.12	0.80
Leadership/autonomy	(45)	2.98	0.91
Risk	(50)	1.88	1.58
Equipment	(76)	2.32	1.56
Family togetherness	(112)	3.14	1.04
Being with people	(125)	2.94	0.89
Meeting/observing new people	(77)	1.68	2.16
General learning	(65)	2.91	0.76
Relationships with nature	(155)	3.40	0.56
Reflect on personal values	(84)	3.02	0.94
Creativity	(111)	2.68	1.46
Nostalgia	(123)	2.52	1.40
Exercise/physical fitness	(150)	3.05	0.96
Physical rest	(129)	2.41	1.82
Escape personal-social pressure	(130)	3.20	0.71
Escape physical pressure	(99)	3.02	0.90
Security	(126)	2.46	1.77
Escape family	(87)	1.57	2.48

<sup>1</sup>Data taken from mailback questionnaire.

<sup>2</sup>Scale ranged from +4, most strongly adds to satisfaction, to -4, most strongly detracts from satisfaction.





Table 25. Outcome domain means and standard deviations by zone.<sup>1, 2</sup>

Outcome Domain	Zone									
	1 (N=15) Mean (S.D.)	2 (N=11) Mean (S.D.)	3 (N=23) Mean (S.D.)	4 (N=24) Mean (S.D.)	5 <sup>3</sup> (N=3) Mean (S.D.)	6 (N=10) Mean (S.D.)	7 (N=7) Mean (S.D.)	8 (N=16) Mean (S.D.)	9 (N=42) Mean (S.D.)	10 (N=17) Mean (S.D.)
Achievement	3.08 (1.13)	3.17 (0.52)	2.91 (0.73)	3.29 (1.19)	-	3.40 (0.67)	3.00 (0.60)	2.81 (1.33)	3.34 (0.60)	2.98 (0.75)
Leadership/Autonomy	2.64 (1.50)	2.94 (0.71)	2.89 (0.67)	3.33 (1.04)	-	3.19 (0.32)	3.72 (0.08)	2.50 (0.71)	3.05 (0.74)	2.78 (0.82)
Risk	1.88 (1.94)	1.42 (1.30)	1.80 (1.71)	2.48 (1.78)	-	2.08 (0.62)	0.58 (2.71)	0.94 (1.50)	1.95 (1.64)	2.21 (1.18)
Equipment	1.89 (2.30)	2.50 (1.06)	2.67 (1.23)	3.17 (1.13)	-	2.88 (0.25)	1.80 (1.72)	2.47 (1.60)	2.29 (1.67)	1.85 (1.62)
Family Togetherness	2.96 (0.82)	3.36 (0.75)	3.28 (0.83)	3.56 (0.80)	-	3.42 (0.49)	3.25 (0.96)	2.96 (1.11)	2.89 (1.53)	2.90 (0.62)
Being with people	2.89 (0.92)	2.84 (1.09)	3.16 (0.74)	3.16 (0.74)	3.63 (0.53)	3.21 (0.47)	2.92 (1.01)	2.61 (1.17)	2.85 (0.93)	2.70 (1.03)
Meeting/observing new people										
General Learning	2.32 (2.15)	2.21 (1.21)	1.80 (1.99)	2.15 (2.36)	-	1.75 (2.51)	0.00 (3.49)	1.30 (2.02)	1.50 (2.31)	1.39 (1.90)
Relationships with Nature	3.10 (0.98)	3.02 (0.65)	2.84 (0.81)	3.18 (0.73)	3.50 (0.10)	3.02 (0.53)	3.06 (0.83)	2.83 (0.68)	2.77 (0.85)	2.60 (0.66)
Reflect on personal Values	3.44 (0.53)	3.44 (0.65)	3.32 (0.57)	3.47 (0.64)	3.80 (0.28)	3.26 (0.52)	3.77 (0.29)	3.26 (0.61)	3.42 (0.54)	3.27 (0.49)
Creativity	3.10 (1.36)	3.33 (0.61)	3.04 (1.05)	3.53 (0.61)	-	2.67 (1.17)	3.42 (0.57)	2.56 (0.37)	2.98 (0.92)	2.67 (1.07)
Nostalgia	2.69 (1.18)	2.29 (1.38)	3.22 (0.97)	2.84 (1.74)	2.50 (0.71)	3.14 (0.69)	2.33 (2.73)	2.55 (1.13)	2.62 (1.63)	2.36 (1.29)
Exercise/Physical Fitness	2.42 (2.11)	2.13 (1.55)	2.80 (1.08)	2.78 (1.17)	-	3.13 (0.99)	1.25 (0.50)	2.23 (0.93)	2.68 (1.38)	2.15 (1.82)
Physical Rest	3.64 (0.71)	3.15 (1.01)	2.87 (1.00)	3.30 (0.79)	3.17 (0.76)	3.15 (0.91)	3.33 (1.17)	2.67 (0.96)	2.99 (0.98)	2.80 (1.07)
Escape From Personal-Social Pressure	2.25 (1.82)	3.40 (1.34)	2.77 (1.52)	2.89 (1.78)	3.50 (0.71)	2.50 (1.91)	2.67 (2.42)	1.33 (1.78)	2.47 (1.56)	1.54 (2.50)
Escape Physical Pressure	3.37 (0.79)	3.08 (0.86)	3.20 (0.77)	3.42 (0.50)	-	2.83 (0.77)	3.54 (0.43)	2.83 (0.75)	3.31 (0.68)	3.05 (0.66)
Security	3.29 (1.14)	2.83 (1.02)	2.65 (1.12)	3.46 (0.58)	3.69 (0.09)	3.19 (0.68)	3.42 (0.26)	2.29 (1.06)	3.10 (0.80)	2.76 (0.74)
Escape Family	2.50 (2.20)	2.63 (1.51)	2.38 (1.96)	2.89 (1.24)	2.50 (0.71)	1.78 (2.91)	1.40 (3.29)	2.14 (1.61)	2.81 (1.35)	2.10 (1.29)
	1.50 (2.68)	1.20 (2.17)	1.17 (2.95)	3.33 (1.12)	-	1.60 (2.41)	3.00 (1.41)	0.50 (3.02)	1.26 (2.68)	1.50 (1.77)

<sup>1</sup> Data from mailback questionnaire.<sup>2</sup> Scale ranged from +4, most strongly adds to satisfaction to -4, most strongly detracts from satisfaction.<sup>3</sup> Blanks indicate missing data due to few observations.



Table 26. Outcome domain means and standard deviations by most important activity.<sup>1,2</sup>

Outcome Domain	Camping Near Auto (N=16) Mean (S.O.)	Camping Away From Auto <sup>3</sup> (N=2) Mean (S.O.)	Hiking/Walking On Trails (N=9) Mean (S.O.)	Rafting/Tubing (N=26) Mean (S.O.)	Fishing (Stream) (N=43) Mean (S.O.)	Fishing (Lake) <sup>1</sup> (N=4) Mean (S.O.)	Swimming/Water Play (N=11) Mean (S.O.)	Picnicking (N=5) Mean (S.O.)	Sightseeing <sup>1</sup> (N=11) Mean (S.O.)	Hunting <sup>3</sup> (N=5) Mean (S.O.)	Kayaking <sup>3</sup> (N=5) Mean (S.O.)	Other (N=12) Mean (S.O.)
Achievement	3.06 (1.24)	3.63 (1.24)	1.88 (1.25)	3.15 (0.77)	3.29 (0.65)	-	3.01 (0.69)	-	-	3.86 (0.27)	3.00 (0.60)	2.80 (0.80)
Leadership/Autonomy	3.57 (0.66)	-	1.26 (1.29)	2.98 (0.66)	2.98 (0.81)	-	2.96 (0.91)	-	3.04 (1.07)	3.83 (0.24)	-	2.62 (0.95)
Risk	2.29 (2.07)	-	0.47 (1.53)	2.00 (1.22)	1.53 (1.67)	-	1.92 (1.95)	-	2.67 (1.89)	-	1.11 (0.95)	2.11 (1.64)
Equipment	2.27 (1.74)	-	0.30 (1.99)	2.93 (0.89)	2.27 (1.78)	2.25 (1.06)	3.50 (0.50)	-	-	-	2.25 (0.65)	2.14 (1.25)
Family Togetherness	3.67 (0.62)	3.25 (1.06)	1.75 (2.51)	3.21 (1.05)	3.14 (0.89)	3.50 (0.71)	3.00 (0.97)	3.20 (1.04)	3.13 (0.74)	3.83 (0.29)	-	3.30 (0.72)
Being with People	3.55 (0.50)	3.63 (0.53)	1.80 (0.65)	2.82 (0.82)	2.75 (1.00)	2.63 (1.59)	3.15 (0.83)	3.42 (0.63)	2.66 (1.22)	3.83 (0.29)	2.50 (0.87)	3.35 (0.50)
Meeting/Observing New People	2.20 (2.35)	-	0.25 (1.73)	1.40 (1.92)	1.31 (2.48)	2.00 (1.09)	2.65 (0.88)	1.17 (4.48)	2.42 (1.02)	3.25 (1.30)	0.75 (0.35)	0.15 (3.19)
General Learning	3.16 (0.57)	3.21 (1.11)	2.55 (0.76)	2.72 (0.77)	2.86 (0.83)	3.19 (0.79)	2.54 (1.01)	3.19 (1.40)	2.63 (0.80)	3.76 (0.22)	2.95 (0.83)	3.12 (0.82)
Relationships with Nature	3.67 (0.41)	3.80 (0.28)	3.36 (0.54)	3.34 (0.57)	3.31 (0.64)	3.40 (0.69)	3.43 (0.76)	3.32 (0.56)	2.29 (0.61)	3.80 (0.28)	3.40 (0.38)	3.18 (0.44)
Perfect on Personal Values	3.46 (0.65)	2.83 (1.65)	2.43 (1.45)	2.56 (1.20)	2.97 (0.75)	3.50 (0.71)	3.67 (0.67)	3.33 (1.16)	3.22 (0.84)	3.83 (0.24)	2.67 (1.89)	2.86 (1.15)
Creativity	3.00 (1.00)	-	2.44 (1.01)	2.50 (1.23)	2.26 (2.10)	-	3.00 (1.16)	2.25 (1.50)	2.43 (1.40)	-	2.50 (0.70)	3.71 (0.49)
Nostalgia	2.54 (1.85)	3.50 (0.71)	1.67 (2.34)	2.41 (1.00)	2.66 (1.15)	3.00 (1.16)	3.00 (1.16)	2.40 (1.52)	2.50 (1.37)	3.00 (1.73)	1.00 (2.94)	3.13 (0.99)
Exercise/Physical Fitness	3.31 (1.05)	-	3.11 (0.78)	2.69 (1.00)	3.07 (0.92)	2.67 (1.53)	3.23 (1.06)	3.00 (1.73)	2.64 (1.11)	3.70 (0.27)	3.40 (0.89)	3.09 (0.86)
Physical Pest	2.64 (2.13)	3.50 (0.71)	0.14 (1.86)	2.06 (1.95)	2.47 (1.86)	3.33 (0.58)	2.38 (2.07)	2.80 (0.84)	2.67 (1.12)	2.67 (1.53)	-	2.60 (2.22)
Escape Personal-Social Pressure	3.64 (0.34)	3.50 (0.71)	2.81 (0.78)	2.92 (0.77)	3.36 (0.66)	3.08 (1.18)	3.43 (0.77)	3.06 (0.94)	2.86 (0.83)	3.75 (0.43)	3.75 (0.35)	3.35 (0.53)
Escape Physical Pressure	3.22 (0.78)	-	2.70 (1.07)	2.87 (1.07)	3.04 (0.87)	-	2.17 (1.10)	3.31 (1.29)	3.13 (0.94)	3.67 (0.47)	3.75 (0.18)	3.50 (0.53)
Security	3.25 (0.93)	3.50 (0.71)	2.44 (1.81)	1.71 (2.42)	2.03 (2.01)	2.75 (0.96)	2.83 (1.33)	2.50 (1.73)	2.50 (1.05)	3.67 (0.58)	2.33 (1.53)	2.70 (2.45)
Escape Family	2.00 (3.16)	-	1.75 (1.89)	1.91 (1.92)	1.08 (2.71)	-	2.13 (1.96)	-	1.20 (3.27)	3.50 (1.00)	0.50 (2.12)	0.80 (3.42)

<sup>1</sup> Data from mailback questionnaire.

<sup>2</sup> Scale ranged from +4, most strongly adds to satisfaction to -4, most strongly detracts from satisfaction.

<sup>3</sup> Blanks indicate missing data due to few observations.



for an outcome for users in different activities. An example of how these tables might be read is below.<sup>3</sup>

If we look down the column for zone 2 in Table 25 we find that the outcomes perceived to contribute strongly to user satisfaction are relationships with nature, physical rest, reflecting on personal values, achievement, exercise/physical fitness, escape personal-social pressures, general learning, leadership/autonomy, being with people, and escape physical pressure. Those perceived to not contribute very much to user satisfaction are escape family and risk taking. If we look across the rows we can see how zone 2 users' perceptions of the outcomes compare to the perceptions of users in other zones. For instance, the value which zone 2 users attach to the achievement outcome is not very different from the value given that outcome by users of other zones, whereas the value that they place on the escape family outcome is considerably different from the value placed on escape family by users of zones 4, 7, and 8 with zones 4 and 7 users being considerably higher and zone 8 users considerably lower.

If we look down the column for hiking/walking on trails in Table 26, we find that the outcomes perceived to contribute strongly to user satisfaction are relationships with nature, exercise-physical fitness, and escape personal-social pressure. Those outcomes perceived to not contribute very much to user satisfaction are physical rest, meeting/observing new people, equipment, and risk taking. If we look across the rows we can see how the hiker/walker perceptions compare to the perceptions of users having other activities as their most important. For instance, the value which hikers/walkers attach to relationships with nature is not very different

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<sup>3</sup>As a general guideline, based upon our work with similar data over several years, we do not consider mean differences of less than 0.7 as being managerially important, even if they are statistically significant.



from the value given the outcome by people participating in other activities. In contrast, the value that they place on being with people is considerably lower than the value placed on that outcome by users in all of the other activity groups.

Fall users perceived that the relationships with nature outcome has the most value to their satisfaction and that meeting/observing other people has the least (Table 27). Other outcomes which were perceived to strongly add to satisfaction were achievement, leadership/autonomy, family togetherness, being with people, exercise/physical fitness, and escape physical pressure.

#### Use of Preference Information

To illustrate what the preference information about activities, settings, and outcomes might mean to recreation, data for one GSRA zone are interpreted below.<sup>4</sup> The basic premise behind this interpretation is that people participate in specific recreation activities in specific settings to realize desired experiences.<sup>5</sup> In this study, these experiences were characterized by desired psychological outcomes.

Beginning with the psychological outcomes, what do zone 2 users want? They perceive that relationships with nature, physical rest, reflecting on

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<sup>4</sup>By considering the data presented in previous tables about activity, setting, and experience preferences of users in each zone, BLM planners should be able to construct narratives similar to the one presented in this section of the report. We feel it is desirable for BLM planners to construct these narratives to gain experience using the data and to insure that the data are combined in ways that answer their planning questions. The only data necessary to construct such narratives are included in the previous tables. However, some knowledge of how people participate in recreation activities enables explaining how certain activities are related to specific settings and experiences.

<sup>5</sup>Some general relationships among these three components are given in Appendix F. Activities, settings, and highly probable outcomes for six recreation opportunity spectrum classes are shown in the appendix.





Table 27. Outcome domain means and standard deviations for fall users of the GSRA.<sup>1,2</sup>

Outcome	Mean (N=18)	S.D.
Achievement	2.81	1.26
Leadership/autonomy	2.98	1.09
Risk avoidance	1.25	1.30
Equipment	2.19	1.18
Family togetherness	2.85	0.86
Being with people	2.82	1.04
Meeting/observing new people	1.18	1.22
General learning	2.75	1.37
Relationships with nature	3.06	1.23
Exercise/physical fitness	3.00	0.91
Physical rest	1.82	1.20
Escape physical pressure	2.80	1.25
Escape family	1.33	1.19

<sup>1</sup>Data from on-site questionnaire.

<sup>2</sup>Scale ranged from +4, most strongly adds to satisfaction, to -4, most strongly detracts from satisfaction.



personal values, exercise/physical fitness, escape personal-social pressures, and achievement are outcomes which considerably contribute to satisfaction from recreating in their most important activity. These desired outcomes characterize an experience which represents a change from the usual home and work environment, where crowding is not experienced, where one can test and develop skills, and where one can feel in touch with nature.

To get these types of outcomes, they participate in activities in an environment which facilitates their delivery. For many of zone 2 users the most important activity was stream fishing. This activity is one that is often associated with the types of outcomes desired by zone 2 users. Stream fishing allows development of skills and a feeling of achievement; it is usually undertaken in a setting quite different from the home and work environment; it allows opportunity for reflection about personal values; and it usually occurs in environments which are not crowded and where one can feel close to nature. Other popular activities in zone 2, such as hiking/walking on trails, rafting, and photography, can be used, in appropriate settings, to obtain the same outcomes.

Setting preferences among zone 2 users are consistent with the outcome preferences and activities and with the ROS setting class of zone 2. The majority of lands in zone 2 are classed roaded-natural. Zone 2 users generally favor some remoteness, but some of the area along roads (probably for access); a generally natural appearing environment, low concentrations of users (some contacts are okay); minimal on-site regulation of users, rustic facilities when facilities are needed, no evidence of resource uses that considerably change the environment (but they will tolerate some change); and low levels of motorized use (but some is okay). Fishermen, hikers, and rafters prefer a little more remoteness, fewer other people, and less motorization than sightseers and campers.



Considering all of these preferences, together, zone 2 might be managed to provide stream fishing, hiking/walking, rafting, camping near auto, and sightseeing opportunities in a setting that appears to be natural (undisturbed by man), with low concentration of users, and where motorized use of the area is restricted to main access roads. When facilities are necessary they should be rustic in appearance, except where they are designed to serve sightseers who also like more modern facilities. On-site regulation of users should be kept to a minimum and, to the extent possible, obvious resource uses that potentially disrupt the natural appearance of the setting (e.g., timber harvesting and mining) should be minimized.

If management provides this type of setting, and the activity opportunities specified, the probability that desired outcomes will be delivered to recreationists should be high.

This narrative has assumed homogeneity in recreation opportunity spectrum class across zone 2. Zone 2 is almost completely covered by the roaded natural recreation opportunity spectrum class, so in general this assumption presented little problem for the analysis that led to the narrative. And, since the purpose of the narrative was to illustrate how to combine the activity, setting, and experience information, the existing recreation opportunity spectrum classes are immaterial to the narrative.

However, where there are multiple recreation opportunity spectrum classes in a zone it would be possible to visualize the different styles of recreation that might be facilitated in the different classes. For instance, within the semi-rural class portions of zone 2, the experiences facilitated would be more influenced by sights and sounds of human activities, including more users and more motorized vehicles. Therefore, if fishing is an activity in the semi-rural portion of zone 2, the probability that



those participating in it will experience as much of a feeling of closeness to nature, remoteness from other users, and an opportunity to reflect on personal values as is experienced by those fishing in the roaded natural class area is low. Management would have to recognize that to the extent different settings are provided, the probability of users in these different settings having the same experiences when participating in the same activity would be lower than if they participated in the same setting.





## PARTICIPATION PROJECTIONS

Participation projections for 1985, 1990, and 2000 were made using the projection model developed by John Hof for the USDA Forest Service 1980 Assessment of Renewable Resources called for by the Forest and Rangeland Renewable Resources Planning Act of 1974 (Hof, 1979). These participation projections indicate the expected increase in participation in 23 outdoor recreation activities.

The projection model used has population, recreation supply, and activity participation variables. It was developed using Heritage Conservation and Recreation Service statistics from the HCRS 1977 nationwide telephone survey. The projections are made using regression models with population size, population composition, and recreation supply as independent variables. The population composition variables are socioeconomic characteristics which are believed to be determinants of changing participation patterns. As the population size, population composition, and recreation supply variables are changed, changes in recreation participation are estimated. The regression equations are in Table 28. There is an equation for each of the 23 activities. The form of each equation is  $Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n$ . The data in Table 28 are the regression coefficients (b) for each independent variable (X) and the intercept (a). The intercept value (a) indicates where the regression line meets or intercepts the vertical axis of the two-dimensional graph on which the regression line is plotted. The regression coefficient (b) indicates the effect of each variable (X) on the slope of the regression line and



Table 28. National regression equation coefficients.<sup>1</sup>

Activity	Percent Urban Residence	Percent Rural Residence	Age (years)	Education (years completed)	Race (percent white)	Work Week (hours/week)	Vacation Days (days/year)	Income (100's)	Sex (percent male)	Parks (number ("close"))	Supply (Index)	Intercept	Price (assumed)
Developed Camping	0	.429520	-.006773	0	.184620	0	.001543	0	.050872	.014280	.035084	.311690	-.0175
Primitive Camping	0	.735521	-.005495	0	.156070	.000904	0	0	-.100750	.009886	.005859	.182570	-.0125
Nature Walking	0	.063887	-.003572	.026279	0	-.001212	.001395	0	-.074247	.017258	.000365	.349720	-.0260
Backpacking	0	.050448	-.007087	.017460	.107140	0	0	0	.064966	.025809	.188820	.202490	-.0165
Bicycling	.428070	0	-.013030	.006366	0	-.002522	.001102	.000146	0	.029863	.000906	.920690	-.0250
Horseback Riding	.028800	.035740	-.004922	0	0	0	0	.000096	0	.008948	.000586	.313620	-.0080
Driving Vehicles Off-Road	.026458	.120930	0	0	0	.008956	0	0	.072811	0	1.972500	.432980	-.0130
Hunting	-.023613	.106580	-.002092	-.011644	.104850	.001917	0	0	.217580	0	.404130	.160170	-.0100
Picnicking	0	0	-.004339	.014232	0	.001074	0	0	-.062937	.018139	.019416	.718870	-.0375
Sightseeing	0	0	-.002232	.026992	.121507	0	.001313	.000202	0	.022297	.000125	.254349	-.0335
Other Walking	0	.035660	-.006133	.015375	0	-.001993	0	0	-.039289	.026678	.023856	.797250	-.0350
Oriving for Pleasure	-.035201	0	-.001968	.024312	0	.001606	0	0	-.050386	.013270	.019849	.494380	-.0350
Canoeing	0	.027433	-.004473	.008023	.083124	-.000796	.000731	.000193	.039743	0	.145140	.094352	-.0080
Sailing	-.026254	-.035502	-.002476	.011407	.033021	0	0	.000280	0	.013269	.000276	-.016565	-.0065
Water-Skiing	-.040521	0	-.005699	.007851	.144490	0	.000938	.000142	.064107	0	.014081	.135530	-.0095
Fishing	-.034671	.040344	-.005906	-.010877	.077611	0	0	0	.198130	.012998	.007600	.762750	-.0280
Other Boating	-.036890	0	-.005082	0	.166280	0	.002200	.000346	.055606	.025546	.495200	.281730	-.0185
Swimming	-.052509	-.088779	-.012060	.015420	.167090	0	0	.000358	-.051326	.025396	.001198	.722350	-.0325
Downhill Skiing	0	0	-.003159	.005579	.070847	0	.000782	.000125	0	.009643	3.386200	.022989	-.0050
Snowmobiling	0	.063683	-.002302	-.004655	.064920	.000489	0	0	.021473	.006427	2.445500	.119130	-.0045
Cross-Country Skiing	0	0	-.001226	.005620	.022891	0	0	0	0	.006496	.012047	-.008467	-.0020
Ice Skating	-.027519	0	-.004791	0	.090926	0	0	.000166	0	.024936	.031285	.235180	-.0085
Sledding	0	.040362	-.007404	-.006387	.178750	-.001114	0	.000187	.021554	.016217	.040354	.389500	-.0110

<sup>1</sup>Regression models developed at Colorado State University by John Hof for the USDA Forest Service 1980 Assessment of Renewable Resources. Data were taken from the HCRS 1977 nationwide telephone survey.



tells us whether or not the line is upward or downward sloping and at what angle to the horizontal axis. Values for the independent variables (Xs) are in Table 29. By substituting the values in Table 29 into the equations (one for each activity), the amount of participation by each member of the population expected to participate in a particular activity (Y) can be calculated. Then, the total amount of participation is projected by multiplying this value by the population projections (Table 30).

The relevant population to consider for GSRA projections is the Colorado population since most GSRA users are from Colorado.<sup>6</sup> Also, population change projections are available for Colorado using OBERS statistics. A high, medium, and low growth estimate were each used in making projections, though the only data reported here are for the most likely medium growth estimate.<sup>7</sup>

Supply enters the projection equation because recreation participation is dependent upon the supply of recreation opportunities. Three supply scenarios were used in making the projections. Supply growth per year was inserted into the projection equation as 0 percent, 2 percent, and 5 percent. These were annual increases in supply calculated as simple (not compound) increases from the base year of 1977.<sup>8</sup> Therefore, using the 2 percent scenario, 1985 supply would be estimated as 1.16 times the 1977 supply. The product of this calculation would be the 1977 supply plus 16 percent (2 percent for each of eight years).

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<sup>6</sup>Observed highway traffic through the GSRA was composed of 73 percent Colorado vehicles and 27 percent non-Colorado vehicles. Among interviewed users of the GSRA, 72 percent were from Colorado. Non-Colorado users were from so many different locations that no one location was deemed suitable for inclusion in projections.

<sup>7</sup>The high growth projections are included in Appendix G.

<sup>8</sup>Supply changes do not appear to follow an exponential growth curve and compound upon themselves.



Table 29. Projections of explanatory variables.

	YEAR		PERCENT URBAN RESIDENCE	PERCENT RURAL RESIDENCE	AGE (years)	EDUCATION (years completed)	RACE (percent white)	WORK WEEK (hours/ week)	VACATION DAYS (days/year)	INCOME (\$100's)	SEX (percent male)	PARKS (number "close")	PRICE (index)
(INITIAL CONDITION)	1977	.334	.285	38.49	12.487	.896	21.565	9.955	173.279	.488	1.219	1.0	
HIGH SCENARIO	1980	.3265	.300	38.87	12.66	.896	21.242	11.75	190.61	.488	1.256	1.22	
	1985	.314	.325	39.65	12.97	.887	20.70	14.73	218.33	.488	1.316	1.60	
	1990	.3015	.350	40.80	13.27	.878	20.16	17.72	247.79	.488	1.377	1.97	
	2000	.3015	.350	41.57	13.87	.860	19.09	23.69	308.44	.488	1.499	1.97	
	2010	.3015	.350	40.03	14.46	.851	19.09	29.67	391.61	.483	1.621	1.97	
	2020	.3015	.350	40.80	15.06	.842	19.09	35.64	467.85	.483	1.743	1.97	
	2030	.3015	.350	40.41	15.66	.833	19.09	41.61	571.82	.478	1.865	1.97	
	1977	.334	.285	38.49	12.487	.896	21.565	9.955	173.279	.488	1.219	1.0	
MEDIUM SCENARIO	1980	.3415	.270	39.26	12.547	.896	21.40	10.85	188.87	.488	1.237	1.22	
	1985	.354	.245	40.80	12.647	.887	21.13	12.34	216.60	.488	1.268	1.60	
	1990	.3665	.220	42.34	12.747	.878	20.86	13.84	244.32	.488	1.298	1.97	
	2000	.3665	.220	45.80	12.947	.860	20.86	16.82	303.24	.488	1.359	1.97	
	2010	.3665	.220	46.57	13.146	.851	20.86	19.81	382.95	.488	1.359	1.97	
	2020	.3665	.220	47.73	13.346	.842	20.86	22.80	466.12	.483	1.359	1.97	
	2030	.3665	.220	48.88	13.546	.833	20.86	25.78	585.68	.483	1.359	1.97	
	1977	.334	.285	38.49	12.487	.896	21.565	9.955	173.279	.488	1.219	1.0	
LOW SCENARIO	1980	.334	.285	39.65	12.487	.896	21.565	9.955	187.141	.488	1.219	1.22	
	1985	.334	.285	41.57	12.487	.887	21.565	9.955	211.40	.488	1.219	1.60	
	1990	.334	.285	43.88	12.487	.878	21.565	9.955	235.66	.488	1.219	1.97	
	2000	.334	.285	48.50	12.487	.869	21.565	9.955	384.18	.488	1.219	1.97	
	2010	.334	.285	51.96	12.487	.860	21.565	9.955	355.22	.488	1.219	1.97	
	2020	.334	.285	53.87	12.487	.851	21.565	9.955	431.46	.488	1.219	1.97	
	2030	.334	.285	55.81	12.487	.842	21.565	9.955	537.16	.488	1.219	1.97	





Table 30. Projections of Colorado population, in millions.

Year	Projections		
	High	Medium	Low
1977	2.473	2.473	2.473
1980	2.616	2.582	2.554
1985	2.891	2.805	2.737
1990	3.183	3.028	2.911
2000	3.797	3.473	3.243
2010	4.618	3.997	3.587
2020	5.644	4.580	3.923
2030	6.830	5.163	4.196

Source: OBERS Projections: Regional Economic Activity in the U.S., U.S. Water Resources Council, Volume 1, 1972, and Current Population Reports, "Population Estimates and Projections," Bureau of the Census, Series P-25, Number 601, 1975.



Recreation participation is calculated as an index value with a 1977 base of 100. Each single index point represents 1 percent. Therefore, an index value of 102 would mean that recreation participation would be expected to increase by 2 percent over participation experienced in 1977.

The recreation participation projections for the GSRA are shown in Table 31. Index values for 1980 are shown in addition to those for 1985, 1990, and 2000 to give a current reference point.

Based on the user activity information in Tables 1, 2, and 3, the activity projections most pertinent to the GSRA are developed camping, canoeing (a proxy for rafting, tubing, and kayaking), fishing, hunting, picnicking, and sightseeing. Assuming the 2 percent increase in supply, participation in these activities is projected to increase by 30, 40, 22, 14, 33, and 41 percent, respectively, by the year 2000.

In addition to supplying opportunities for these activities, based on Recreation Opportunity Planning capability analysis, the GSRA appears to be well suited to provide opportunities for primitive camping, nature walking, horseback riding, and ORVing. Under the 2 percent supply change scenario, participation in these activities is expected to increase by 30, 34, 19, and 32 percent, respectively, by the year 2000.

These participation estimates can be used in three ways. First, they indicate changes in popularity of activities as population and recreation opportunities change. For instance, the projections in Table 31 suggest that participation in developed camping is likely to increase faster than participation in fishing or horseback riding.

Second, one can estimate the range of probable change in participation in a particular activity by comparing the projections under various population and supply scenarios. For instance, using estimates of participation



Table 31. Recreation participation projections assuming a medium population growth scenario and three supply growth assumptions for the Glenwood Springs Resource Area (base year 1977 = 100).<sup>1</sup>

Activity	Year	Supply Growth Per Year		
		0 percent	2 percent	5 percent
Developed Camping	1980	102	104	106
	1985	105	109	116
	1990	108	115	126
	2000	115	130	153
Primitive Camping	1980	101	102	104
	1985	102	106	111
	1990	102	108	118
	2000	115	130	153
Canoeing	1980	104	105	106
	1985	110	112	116
	1990	116	120	126
	2000	131	140	153
Sailing	1980	106	108	110
	1985	119	123	128
	1990	131	138	148
	2000	162	176	196
Water Skiing	1980	103	103	104
	1985	107	108	110
	1990	110	112	116
	2000	119	124	131
Fishing	1980	102	102	102
	1985	106	106	107
	1990	110	110	111
	2000	120	120	121
Outboard Boating	1980	104	104	105
	1985	112	114	116
	1990	120	122	126
	2000	141	146	153
Swimming	1980	103	103	104
	1985	109	111	113
	1990	114	117	121
	2000	127	133	141
Nature Walking	1980	103	103	104
	1985	110	110	111
	1990	116	117	118
	2000	132	134	138
Backpacking	1980	102	102	103
	1985	105	107	109
	1990	107	110	114
	2000	114	120	128



Activity	Year	Supply Growth Per Year		
		0 percent	2 percent	5 percent
Bicycling	1980	102	102	103
	1985	106	107	108
	1990	109	110	112
	2000	116	118	122
Horseback Riding	1980	101	102	103
	1985	104	106	109
	1990	106	109	114
	2000	112	119	129
ORVing	1980	102	102	103
	1985	108	109	110
	1990	113	114	116
	2000	130	132	135
Hunting	1980	101	101	102
	1985	103	104	106
	1990	103	105	109
	2000	110	114	121
Picnicking	1980	103	103	104
	1985	109	110	112
	1990	115	117	119
	2000	129	133	139
Downhill Skiing	1980	104	106	109
	1985	111	116	124
	1990	117	127	141
	2000	134	153	181
Snowmobiling	1980	100	101	103
	1985	98	102	107
	1990	96	102	110
	2000	94	106	123
Sightseeing	1980	104	104	104
	1985	112	112	113
	1990	120	120	121
	2000	140	141	143
Outdoor Walking	1980	103	103	103
	1985	108	109	110
	1990	113	114	116
	2000	127	129	132
Cross Country Skiing	1980	102	104	107
	1985	105	110	118
	1990	107	117	131
	2000	112	131	160
Ice Skating	1980	103	104	106
	1985	108	111	116
	1990	112	118	126
	2000	122	141	151





Activity	Year	Supply Growth Per Year		
		0 percent	2 percent	5 percent
Sledding	1980	102	103	105
	1985	104	107	112
	1990	105	111	120
	2000	109	121	139
Pleasure Driving	1980	103	103	104
	1985	110	110	111
	1990	116	117	118
	2000	133	135	137

<sup>1</sup>Values are index values with a base of 100 at year 1977. They indicate that participation will increase by a given percentage over 1977. For instance, participation in developed camping with no increase in supply will increase by 5 percent in 1985, 8 percent in 1990, and 15 percent in 2000 from 1977 participation. Calculations were made using the USDA Forest Service RPA projection model developed at Colorado State University.



in Table 31, we see that for the year 2000 participation in developed camping is likely to increase 15 to 53 percent depending upon the growth in supply of opportunities. If the supply scenarios bracket the realistic possibilities, planners would need to be prepared for at least a 15 percent growth in participation and for not more than a 53 percent growth in participation.

Third, one can estimate the effect of a change in supply of opportunities. The projections in Table 31 show that if management attempts to increase the supply of opportunities to meet some expected use, a secondary increase in use can be expected to occur requiring additional supply. Therefore, the projections can be used as guidelines indicating the appropriate level of supply to meet expected use. For instance, if we expect participation in developed camping to increase by 20 percent over the next 20 years (year 2000) and therefore build facilities at the rate of 1 percent per year to accommodate this increase, our projections indicate that the consumption at the end of 20 years will not be 20 percent greater, but rather 22.5 percent greater (interpolation between participation indexes for 0 and 2 percent supply growth of Table 31). To meet the 20 percent projection increase, only a 0.733 percent increase per year in supply is necessary.

In using these recreation participation projections, one should remember that they were developed using a national projection model developed for RPA activities and that the input data were population projections for Colorado. Both facts suggest that these projections are not specific to the GSRA. They are applicable to any area that derives its primary outdoor recreation clientele from Colorado. Therefore, in using them in the GSRA consideration should be given to the unique and common resources of the



GSRA and to the present use patterns of the area. With these considerations, a better fit of the projections to the GSRA situation can be made. For instance, based upon the resources and present use patterns of the GSRA, we would expect the projections for activities such as developed camping and fishing to be more applicable to the GSRA than projections for activities such as ice skating and bicycling.

There is no direct comparability between these projections and the preferences indicated in the preceding chapter of this report. The information in the preceding chapter concerns current activities and preferred recreational settings and experiences. Taken together, this information (in the preceding chapter) would describe different styles of preferred recreation activity. The information in this chapter concerns activity participation projections. If one assumed that the styles of recreation activities preferred presently will be preferred during the next few years, then the preference information could be considered applicable to the activity projections. That is, the style of developed camping, fishing, etc. projected for the future would be those styles depicted by the preference information in the preceding chapter.



## USE OF THE GLENWOOD SPRINGS RESOURCE AREA

The BLM has information on the use of the Glenwood Springs Resource Area. This information was supplied to us, and we have examined it relative to the study data we collected.

### Study Data

Several types of use data were collected for the GSRA. Among these were number of users, party size, and nights and time spent in the study area and in each zone (Table 32). Sixty-four percent of all parties contacted were in zones 1, 3, 8, 9, and 10. These same zones had 66 percent of all users. These percentages are representative of the overall distribution of users in the GSRA because of equal sampling across zones. Overnight use for the majority of users of the GSRA at the time of the interview was less than one night; the exception was zones 2, 4, and 5 where the average nights stayed was 1.1, 1.5, and 1.1, respectively. Average time spent in the GSRA at the time of the interview showed a pattern across zones comparable to nights stayed. Average time spent in the GSRA was greater than eight hours in all zones except 7. Activity participation in zone 7 primarily consisted of stream fishing, picnicking, sightseeing, photography, and auto driving for recreation. Given these relatively transitory activities, the zone 7 average time of 2.5 hours seems reasonable.

Thirty-nine percent of all GSRA users were there for the first time (Table 33). Users in zones 3, 5, and 6 were the most experienced with about 75 percent of them having been to the GSRA at least once before.





Table 32. Use of GSRA by zone.<sup>1</sup>

Zone	Percent of All Parties	Percent of All Users	Average Party Size	Average Nights Stayed	Average Time in GSRA (Hrs.)
1	10	5	2.6	0.7	84.9 <sup>2</sup>
2	7	4	2.2	1.1	27.9
3	14	13	3.9	0.5	8.5
4	9	11	4.8	1.5	30.8
5	5	3	2.4	1.1	31.9
6	8	12	5.9	0.3	8.5
7	7	4	2.1	0.1	2.7
8	10	6	2.5	0.6	9.3
9	20	26	5.4	0.6	14.4
10	10	17	7.4	0.4	12.6
Total GSRA	N=327	N=1,372	4.2	0.6	21.7

<sup>1</sup> Data from front-end interview.

<sup>2</sup> This high number of hours was due to two users who had been in the area for over a month.



Table 33. Visits to the GSRA during last 10 years by zone (percent).<sup>1,2</sup>

Zone	(N)	Visits During Past 10 Years					Five+
		Zero	One	Two	Three	Four	
1	(32)	44	13	6	3	0	34
2	(24)	50	8	8	0	4	29
3	(45)	29	11	9	2	2	47
4	(30)	43	13	7	3	0	33
5	(17)	24	12	18	12	0	35
6	(27)	30	15	7	0	0	48
7	(22)	50	18	14	0	0	18
8	(30)	40	20	0	7	3	30
9	(66)	41	20	12	5	3	20
10	(30)	43	23	7	3	3	20
Total GSRA	(323)	39	16	9	3	2	31

<sup>1</sup>Data from front-end interview.

<sup>2</sup>Percentage may not add to 100 due to rounding.



For the entire GSRA, age was distributed across all the age categories (Table 34). Certain zones, however, attracted users of specific age categories. For example, 50 percent of zone 6 and 43 percent of zone 10 users were under 30 years of age, while only 16 percent of zone 4 and 26 percent of zone 1 users were under 30 years of age.

More males (66 percent) than females (34 percent) used the GSRA (Table 35). This was true for all zones except 3 and 6, where more females (59 percent and 60 percent) than males were users. Fifty-six percent of the users were married (Table 36). Zone 4 had the smallest percentage of married users (29 percent), and zone 7 had the largest percentage (71 percent). Thirty-five percent of the users had 12 or fewer years of schooling, and 47 percent had one to four years of college or technical school (Table 37). The largest proportion of users (24 percent) came from communities with populations of 500,000+, though a lot of users also came from medium to small communities (Table 38). Only 1 percent came from rural areas. The majority of the users travelled to the GSRA by cars (43 percent) or trucks (31 percent) (Table 39). These proportions were fairly constant across the zones, except for zone 6 where 22 percent travelled by car and 48 percent by truck.

Most users made only one or two visits to the GSRA during summer 1979 (Table 40). However, one-third made more than five visits. Zone 8 had the largest proportion of one-time users (63 percent), while zone 3 had the largest proportion of users (70 percent) visiting the GSRA five or more times during summer 1979. Other zones having frequent GSRA users were zones 1 (44 percent), 4 (35 percent), 5 (67 percent), and 6 (44 percent).

The characteristics of 1979 fall season users are shown in Table 41. Average age of users was about 31 years, two-thirds of the users were males, half the users were married, the average years of formal schooling of users



Table 34. Age of users by zone (percent).<sup>1,2</sup>

Zone	(N)	Age								
		<20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	55+
1	(15)	13	13	0	27	27	0	0	0	15
2	(11)	0	18	9	9	18	0	27	0	18
3	(23)	30	13	4	17	4	9	4	4	13
4	(24)	8	4	4	17	8	8	8	13	29
5	(3)	0	33	67	0	0	0	0	0	0
6	(10)	20	10	20	20	10	0	10	10	0
7	(7)	0	14	14	57	0	0	0	0	14
8	(16)	6	13	25	13	6	6	6	0	25
9	(42)	2	17	21	2	12	12	7	2	24
10	(17)	0	29	24	0	12	24	6	0	6
Total GSRA	(168)	9	15	15	13	11	9	7	4	15

<sup>1</sup>Data from mailback questionnaire.

<sup>2</sup>Percentages may not add to 100 due to rounding.





Table 35. Sex of users by zone (percent).<sup>1</sup>

Zone	(N)	Sex	
		Male	Female
1	(15)	73	27
2	(11)	91	9
3	(22)	41	59
4	(24)	54	46
5	(3)	100	0
6	(10)	40	60
7	(7)	71	29
8	(16)	63	37
9	(41)	76	24
10	(16)	81	19
Total GSRA	(165)	66	34

<sup>1</sup>Data from mailback questionnaire.



Table 36. Marital status of users by zone (percent).<sup>1</sup>

Zone	(N)	Marital Status	
		Married	Single
1	(15)	53	47
2	(11)	36	64
3	(22)	50	50
4	(24)	29	71
5	(3)	67	33
6	(10)	50	50
7	(7)	71	29
8	(16)	38	62
9	(41)	49	51
10	(16)	31	69
Total GSRA	(165)	56	44

<sup>1</sup>Data from mailback questionnaire.



Table 37. Education of users by zone (percent).<sup>1,2</sup>

Zone	(N)	<13	Years of School								
			13	14	15	16	17	18	19	20	21
1	(15)	27	13	--	20	7	--	27	7	--	--
2	(11)	27	9	9	9	27	18	--	--	--	--
3	(22)	69	--	13	--	13	5	--	--	--	--
4	(24)	46	29	8	--	13	4	--	--	--	--
5	(3)	0	0	33	0	67	0	0	0	0	0
6	(10)	20	0	20	20	20	10	10	0	0	0
7	(7)	43	0	0	29	14	0	14	0	0	0
8	(16)	31	6	0	0	44	6	6	0	0	6
9	(41)	32	2	2	10	27	7	15	5	0	0
10	(16)	13	13	0	19	44	0	6	0	6	0
Total GSRA	(165)	35	8	6	9	24	5	8	2	1	1

<sup>1</sup>Data from mailback questionnaire.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 38. Population of home communities of users by zone (percent).<sup>1,2</sup>

Zone	(N)	Population					
		500,000+	100,000-499,999	25,000-99,999	5,000-24,999	Below 5,000	Rural
1	(15)	33	7	7	27	20	7
2	(11)	36	9	27	18	9	0
3	(22)	5	9	5	9	36	36
4	(22)	14	5	32	14	18	18
5	(3)	0	0	33	33	0	33
6	(10)	20	0	0	30	10	40
7	(7)	29	0	14	14	14	29
8	(15)	40	7	20	7	13	13
9	(39)	33	15	28	10	10	3
10	(16)	13	6	19	31	13	19
Total GSRA	(160)	24	8	19	16	16	1

<sup>1</sup>Data from mailback questionnaire.

<sup>2</sup>Percentages may not add to 100 due to rounding.





Table 39. Mode of travel to GSRA by zone (percent).<sup>1,2</sup>

Zone	(N)	Travel Method							
		Car	Truck	Van	Camper	Motorhome	Motorcycle	4-wheel	Other
1	(31)	45	26	7	0	3	0	10	10
2	(23)	43	26	13	4	4	0	0	9
3	(43)	42	19	2	7	5	5	19	2
4	(30)	47	40	7	0	0	0	7	0
5	(17)	47	24	12	0	6	0	12	0
6	(27)	22	48	4	0	0	0	11	15
7	(22)	41	32	0	5	0	5	18	0
8	(32)	53	16	13	9	0	0	6	3
9	(66)	38	39	5	3	6	2	6	2
10	(31)	52	32	0	3	3	3	7	0
Total GSRA	(322)	43	31	6	3	3	2	9	4

<sup>1</sup>Data from front-end interview.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 40. Number of visits to GSRA during 1979 summer use season by zone (percent).<sup>1,2</sup>

Zone	(N)	Number of Visits				
		1	2	3	4	5 plus
1	(14)	50	0	0	7	43
2	(11)	36	46	9	0	9
3	(23)	13	9	9	0	70
4	(23)	22	35	9	0	35
5	(3)	33	0	0	0	67
6	(9)	22	11	11	11	44
7	(7)	29	29	14	9	29
8	(16)	63	6	19	6	6
9	(41)	42	22	5	5	27
10	(17)	41	12	12	6	29
Total GSRA	(164)	35	18	9	4	34

<sup>1</sup>Data from mailback questionnaire.

<sup>2</sup>Percentages may not add to 100 due to rounding.



Table 41. User characteristics for the GSRA for fall (percent).<sup>1,2</sup>

Age								
<20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	55+
6	28	17	17	6	6	17	0	6
Average = 31.2 years								
Sex								
Male		67	Female		33			
Marital Status								
Married		50	Single		50			
Formal Education								
<13	13	14	15	16+				
39	17	6	6	33				
Average = 13.5 years								
Population of Home Community								
500,000+	100,000-499,999		25,000-99,999		5,000-24,999	5,000	Rural	
0	22		11		22	28	17	
State of Residence								
Colorado		Other						
83		17						

<sup>1</sup>Data from on-site questionnaire.

<sup>2</sup>N=18 for all variables.



was about 13.5, most users were from small- to medium-sized communities, and nearly all users were Colorado residents.

#### BLM Information

BLM information on use of the area came from several sources: Colorado Division of Wildlife, Colorado Highway Department, Colorado Division of Parks, the USDA Forest Service North Central Forest Experiment Station, various special interest groups, and field observations by BLM personnel. Table 42 shows our reorganization of the BLM data into a form compatible with our zoning structure. Reading down the activity column shows the activities identified by the BLM as occurring on their lands. The zones used in our study and total visitor days for the entire GSRA are listed across the top of the table. An "X" in the table indicates that the BLM has identified a particular activity as occurring in a specific zone. A number indicates the number of visitor days of use that occurred in that zone during 1979. Table 42 allows identification of an activity within a zone or, in a few cases, visitor days in a zone. From the information supplied to us by the BLM, nothing can be said about frequency, proportion, or importance of activities within a zone.

#### Study Data and BLM Information

The kinds of information generated in the present study and by the BLM are not directly comparable. They are complementary and can be used to construct a more complete assessment of the recreational use of the Glenwood Springs Resource Area.

In general, where the information is somewhat comparable, the present study has identified a greater variety of recreation activities taking place in more zones of the GSRA than has the BLM information. For instance, if





Table 42. Activities and amount of use by zone from BLM data.

Activity	Zone <sup>1</sup>										Total <sup>2</sup> Visitor Days GSRA
	1	2	3	4	5	6	7	8	9	10	
Motorcycling		X			X		X		X	X	
Four-wheel driving		X			X		X				
Duck hunting					3,728			X	1,539		
Goose hunting					371			X			
Sage grouse hunting	X	X	X	X	X	X	X	X	X	X	610
Rabbit hunting (cottontail)	X	X	X	X	X	X	X	X	X	X	9,000
Rabbit hunting (snowshoe)	X	X	X	X	X	X	X	X	X	X	4,000
Blue grouse hunting					525		X		2,700	X	
Wildlife viewing	X	X	X		X		X	X	X	X	
Fishing (lake)			17,500								
Pleasure boating			17,500								
Spelunking			X							X	
Big game hunting	X	X	X	X	X	X	X	X	X	X	64,600
Fishing (Colorado River)		X	X	X		X	X		X	X	7,500 <sup>3</sup>
Fishing (Crystal River)		833									
Fishing (Frying Pan River)	X										312
Fishing (Roaring Fork River)	X	X									3,854
Fishing (Eagle River)							X	X	X		4,167
Fishing (Piney River)								X			625
Kayaking	469	X					X				2,375
Rafting			8,550		1,575	12,500	488		10,500		33,615 <sup>4</sup>
Camping		240		225	120		3,150		5,257	240	
Picnicking		X									

<sup>1</sup>An X indicates presence of an activity in a zone.

<sup>2</sup>Represents visitor days for the entire GSRA.

<sup>3</sup>Visitor days could not be estimated for specific areas of the Colorado River, this figure represents a total for the river not the total GSRA.

<sup>4</sup>Several zones border each other and use reported in one zone could be occurring in the bordering zones.



participation in picnicking as reported in Tables 1 and 42 is compared, one finds that the present study identified picnicking as occurring in nine of the zones while BLM information indicates that it occurs in only one zone. An exception to this general finding is hunting, which BLM indicates as occurring in all zones and the present study indicates as occurring in only three zones. If fall use were included in Table 1, the findings might be more comparable.

It is our evaluation that the BLM information contained in this report is useful for planning, but that it is insufficient. Since it only deals with activities, is not systematically collected and analyzed, does not produce a very complete picture of GSRA use, and only deals with present use, it only provides a rough indicator of present use and possible future use of the GSRA. One way to improve upon this information is for the BLM to systematically conduct some observations of use. Observations should be made according to a prearranged schedule and recorded on an observation form. Other observations, made on an opportunistic basis, should be used to supplement the systematically obtained observations. The value of systematically obtained observations is simply that one insures observation at all subareas of the GSRA, and that one can calculate possibilities of error in sampling of use. Without systematic observations, there is no way to estimate the probability that the use observed is representative of the use actually occurring.



## METHODOLOGY

The methods described below pertain to collection and analysis of user preference, use, and socioeconomic data obtained as part of this study. Methods used for participation projection and for comparison of study and BLM data are described in the chapters where results for each are presented.

### Data Collection

The study area was divided into 30 zones (see maps) and a sampling schedule was designed to provide equal sampling time for each zone and also to assure equal sampling across days of the week (Tables 43 and 44). The sampling schedule was divided into two periods, one for summer use and one for fall use. Summer use data were collected by means of an on-site interview and a mailback questionnaire. Fall use data were obtained through an on-site questionnaire. User contact for the on-site interview (summer) and on-site questionnaire (fall) was accomplished by an interviewer who systematically traversed three zones per day in search of users.

Observation of traffic along the nine main transportation routes into the GSRA was conducted according to the schedule shown in the column labeled "highway samples" in Tables 43 and 44. The time frame for traffic sampling was divided into A.M. (8-12) and P.M. (1-5). Each route was observed for a total of eight observation periods and the sampling schedule was designed to assure observation on weekday and weekend days for all routes.

### On-Site Interview (Summer)

The primary purpose of the on-site interview (Appendix A) was to obtain names and addresses of users observed in the field so that they could be



Table 43. Summer sampling schedule.

Date	Highway Sample	Zone	Date	Highway Sample	Zone	Date	Highway Sample	Zone	Date	Highway Sample	Zone
June 1		1, 2, 4	June 26		10, 11, 13	July 23		28, 29, 30	Aug. *18		20, 21, 22
* 2		3, 5, 6	27	133 8-12 a.m.	3, 5, 6	26		3, 5, 6	*19		3, 5, 6
* 3		7, 8, 9, 12	*30		14, 15, 16	27	325 1-5 p.m.	7, 8, 9, 12	22		1, 2, 4
4		19, 18, 17	July * 1		1, 2, 4	*28		19, 18, 17	23	133 1-5 p.m.	3, 5, 6
5		10, 11, 13	2	Silt 8-12 a.m.	19, 18, 17	*29		1, 2, 4	24		14, 15, 16
6	I-70 8-12 a.m.	14, 15, 16	3		20, 21, 22	30		28, 29, 30	*25		10, 11, 13
* 9		20, 21, 22	6	24 1-5 p.m.	23, 24, 25	Aug. 3	I-70 1-5 p.m.	20, 21, 22	*26		14, 15, 16
*10		23, 24, 25	* 7		26, 27	* 4		23, 24, 25	29	82 1-5 p.m.	1, 2, 4
11	131 8-12 a.m.	26, 27	* 8		28, 29, 30	* 5		26, 27	30		23, 24, 25
12		28, 29, 30	9		7, 8, 9, 12	8		14, 15, 16	31		20, 21, 22
13		3, 5, 6	10		17, 18, 19	9	13-789 8-12 a.m.	10, 11, 13	Sept. * 1		26, 27
*16		19, 18, 17	13	325 8-12 a.m.	7, 8, 9, 12	10		19, 18, 17	* 2		28, 29, 30
*17	13-989 1-5 p.m.	10, 11, 13	*14		10, 11, 13	*11		7, 8, 9, 12	5		3, 5, 6
18		14, 15, 16	*15	I-70 1-5 p.m.	14, 15, 16	*12		1, 2, 4	6		20, 21, 22
19	I-70 8-12 a.m.	20, 21, 22	16		1, 2, 4	15	Silt 1-5 p.m.	19, 18, 17	7	24 8-12 a.m.	23, 24, 25
20		23, 24, 25	17		3, 5, 6	16		7, 8, 9, 12	* 8		26, 27
*23		26, 27	20	131 1-5 p.m.	26, 27	17		28, 29, 30	* 9		28, 29, 30
*24		28, 29, 30	*21		23, 24, 25						
25	82 8-12 a.m.	1, 2, 4	*22		20, 21, 22						

\*Denotes weekend days.

\*Denotes weekend days.





Table 44. Fall sampling schedule.

Date	Highway Sample	Zone	Date	Highway Sample	Zone	Date	Highway Sample	Zone
Sept. 10		1, 2, 4	Oct. 12	I-70 1-5 p.m.	14, 15, 16	Nov. *11		3, 5, 6
13	133 8-12 a.m.	3, 5, 6	*13		10, 11, 13	12	325 1-5 p.m.	7, 8, 9, 12
14	325 8-12 a.m.	7, 8, 9, 12	*14		19, 18, 17	13		19, 18, 17
*15		10, 11, 13	15		7, 8, 9, 12	14		1, 2, 4
*16		14, 15, 16	16		1, 2, 4	*17		7, 8, 9, 12
20	I-70 8-12 a.m.	20, 21, 22	19		20, 21, 22	*18		10, 11, 13
21		23, 24, 25	*20		23, 24, 25	19	I-70 8-12 a.m.	13, 15, 16
*22		26, 27	*21		26, 27	20	Silt 1-5 p.m.	19, 18, 17
*23		28, 29, 20	22		28, 29, 30	21	133 1-5 p.m.	3, 5, 6
24		3, 5, 6	23		7, 8, 9, 12	*24		20, 21, 22
27		19, 18, 17	26	Silt 8-12 a.m.	19, 18, 17	*25		26, 27
28	13-789 8-12 a.m.	10, 11, 13	*27		1, 2, 4	26	24 1-5 p.m.	23, 24, 25
*29		14, 15, 16	*28		3, 5, 6	27		28, 29, 30
*30		20, 21, 22	29		14, 15, 16	28	82 1-5 p.m.	1, 2, 4
Oct. 1	24 8-12 a.m.	23, 24, 25	30	13-789 1-5 p.m.	10, 11, 13			
2	131 1-5 p.m.	26, 27	31		20, 21, 22			
5	82 8-12 a.m.	1, 2, 4	Nov. * 3		23, 24, 25			
* 6		7, 8, 9, 12	* 4		28, 29, 30			
* 7		19, 18, 17	5	131 8-12 a.m.	26, 27			
8		28, 29, 30	6	I-70 1-5 p.m.	20, 21, 22			
9		3, 5, 6	7		19, 18, 17			
			*10		1, 2, 4			

\*Denotes weekend days.



sent a questionnaire. The form also provided a means to collect data on where users entered the GSRA, primary method of travel, group size, primary activity, visits to the GSRA in the past 10 years, and the zones traversed and nights spent in each during the trip at the time of the interview.

#### Highway Use Observation

The purpose of the highway use observations was to determine residence origins of people passing through the GSRA. Collection of highway use information was accomplished by the observer strategically being located at a vantage point which allowed for a clear view of the license plates on passing vehicles. From this point the observer would record whether the vehicle was of in-state or out-of-state origin. If the vehicle was from in-state, the letters on the plate were recorded; if it was from out-of-state, the standard state abbreviations were recorded. This allowed for identification of place of vehicle origin by state and by county for Colorado. Appendix B is the recording form. The general locations of these observations were on the boundaries of the GSRA and only vehicles entering the GSRA were recorded. Obvious commercial vehicles were not included in the sample.

#### Mailback and On-Site Questionnaires

The mailback questionnaire (Appendix C) was used to obtain setting and outcome preferences; general use information such as number of visits to the GSRA during the 1979 summer use season, group size, total time spent in GSRA, and activity participation; and general socioeconomic data such as age, sex, population of home residence, and education level.

Outcome preferences were obtained by having respondents list the one activity they engaged in most during their most recent visit to the GSRA and, with that activity in mind, to rate the effect they perceived a specific



psychological outcome would have on their level of satisfaction if they engaged in the same activity in the same area the following summer. A list of 69 psychological outcome items was used.<sup>9</sup>

Setting preferences were measured by presenting five different settings to respondents and having them evaluate each one of eight factors applicable to a specific setting. Settings were defined according to ROS criteria and represented primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, and semi-rural settings. The factors evaluated for each setting were condensed forms of the criteria used for classification in ROS. Respondents were then asked to rate the favorableness of each setting as a whole. All of these evaluations were made in reference to the same activity used for response to outcome preference items.

Mailback questionnaires were sent to all users who provided names and addresses and two follow-up questionnaires were sent at three-week intervals to non-respondents.

An on-site questionnaire (Appendix D) was used to collect data from fall users because the time frame for the study did not allow for a mailback questionnaire. The on-site questionnaire was a shortened version of the mailback questionnaire. It contained questions on socioeconomic variables, activities, and outcome and setting preferences. The section on outcome preferences is the same as the one of the mailback, except that the number of items was reduced to 27, with nine pertaining only to hunters. The section on setting preferences consisted of a description of the setting with the eight setting factors collapsed into four. The respondents

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<sup>9</sup>These items were from a much longer list developed by B. L. Driver and P. J. Brown at the Rocky Mountain Forest and Range Experiment Station, USDA Forest Service (Appendix E).



were asked to read the descriptions of the settings and then to rate the favorableness of each for their activity.

The on-site questionnaires were administered in the field. Users were approached while recreating and asked to complete the questionnaire.

### Analysis

Analysis of socioeconomic, use, and preference data was accomplished using the Statistical Package for the Social Sciences (SPSS). Frequency and Crosstabs routines were used to generate frequency and central tendency (e.g., mean) statistics and to look at relationships between categorical data. Psychological outcome items were analyzed after they had been grouped into psychological outcome domains in accordance with those developed in other studies. For most variables, means and standard deviations are reported. Means indicate the average value over all respondents for each variable. Standard deviations indicate the degree of dispersion of responses around the mean; they indicate the 67 percent confidence interval around the mean so that we could say that two-thirds of the time we are confident that the true population mean is within the deviation around the mean ( $\bar{X} \pm \text{s.d.}$ ) indicated by the standard deviation. The .95 confidence interval is two standard deviations around the mean.





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## APPENDIX A

### ON-SITE INTERVIEW SCHEDULE



VISITOR REGISTRATION

TO VISIT (AREA) \_\_\_\_\_

LOCATION OF EXIT \_\_\_\_\_

DATE \_\_\_\_\_

LOCATION OF ENTRY \_\_\_\_\_

STARTING DATE \_\_\_\_\_

PRIMARY METHOD OF TRAVEL \_\_\_\_\_

NUMBER OF PEOPLE IN GROUP \_\_\_\_\_

NUMBER OF PACK OR SADDLE STOCK \_\_\_\_\_

NUMBER OF WATERCRAFT OR VEHICLES \_\_\_\_\_

VISITING THE AREA IS: ☐ 1) The primary trip purpose  
☐ 2) One of several planned stops  
☐ 3) Something they decided to do while near the area

HOW MANY TIMES VISITED THE AREA IN THE PAST 10 YEARS:

☐ 1) First time ☐ 3) Twice ☐ 5) Four times  
☐ 2) Once before ☐ 4) Three times ☐ 6) Five or more times

USING A MAP OF THE AREA, LIST ALL ZONES TRAVERSED IN SEQUENCE OF TRAVEL.

TRAVEL ZONES OR AREAS \_\_\_\_\_

# OF NIGHTS IN EACH \_\_\_\_\_

TRAVEL ZONES OR AREAS \_\_\_\_\_

# OF NIGHTS IN EACH \_\_\_\_\_

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY, STATE \_\_\_\_\_ ZIP \_\_\_\_\_

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY, STATE \_\_\_\_\_ ZIP \_\_\_\_\_

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY, STATE \_\_\_\_\_ ZIP \_\_\_\_\_

*Completion of this form is voluntary and is not required by law or to obtain a federal benefit.*



APPENDIX B

HIGHWAY USE OBSERVATION FORM





COLORADO

## OTHER STATES

[illegible]



APPENDIX C

MAILBACK QUESTIONNAIRE



Glenwood Springs Resource Area Summer Use Questionnaire

This questionnaire is designed to learn more about the users of the Glenwood Springs Resource Area. Your input could have an impact on management of the area. Please read the instructions for each question carefully and respond to all the questions.

Section 1

The following questions are designed to learn more about your recent trip to the Glenwood Springs Resource Area. Before you answer the questions would you please examine the map of the Glenwood Springs Resource Area (on the last page) to familiarize yourself with the area.

1. How many recreation visits have you made to the Glenwood Springs Resource Area during the summer of 1979 (June to September)?  
\_\_\_\_\_
2. How many people were in your party on your most recent recreation trip to the Glenwood Springs Resource Area?  
\_\_\_\_\_ number (including yourself)
3. What was the total time you spent in the area on your most recent recreation trip? \_\_\_\_\_ (number of hours)

Section 2

Last summer you were contacted by one of our interviewers while you were recreating in the Glenwood Springs Resource Area. Please indicate which of the following activities you engaged in within the area where you were contacted.

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> 1. Camping near auto         | <input type="checkbox"/> 10. Picnicking                  | <input type="checkbox"/> 19. Photography                 |
| <input type="checkbox"/> 2. Camping away from auto    | <input type="checkbox"/> 11. Sightseeing                 | <input type="checkbox"/> 20. Gathering forest products   |
| <input type="checkbox"/> 3. Hiking/walking on trails  | <input type="checkbox"/> 12. 4-wheel driving             | <input type="checkbox"/> 21. Prospecting/rock hounding   |
| <input type="checkbox"/> 4. Hiking/walking off trails | <input type="checkbox"/> 13. Motorcycling                | <input type="checkbox"/> 22. Hunting                     |
| <input type="checkbox"/> 5. Rafting/tubing            | <input type="checkbox"/> 14. Bicycling                   | <input type="checkbox"/> 23. Auto-driving for recreation |
| <input type="checkbox"/> 6. Fishing (stream)          | <input type="checkbox"/> 15. Horseback riding            | <input type="checkbox"/> 24. Canoeing                    |
| <input type="checkbox"/> 7. Fishing (lake)            | <input type="checkbox"/> 16. Technical mountain climbing | <input type="checkbox"/> 25. Kayaking                    |
| <input type="checkbox"/> 8. Swimming/water play       | <input type="checkbox"/> 17. Nature study                | <input type="checkbox"/> 26. Other (specify) _____       |
| <input type="checkbox"/> 9. Sunbathing                | <input type="checkbox"/> 18. History study               |  |

Section 3

Different types of outdoor recreation opportunities provide users with different types of experiences. Managers of the Glenwood Springs Resource Area would like to know what adds to or detracts from the level of satisfaction you get from visiting that area. Because people's preferences change for different activities these questions should be answered with only one activity in mind. This should be the activity you engaged in most while in the area where you were contacted by our interviewer. Please list that one activity here \_\_\_\_\_ (one activity).

Now, imagine that you were to engage in the activity you listed above in the same area next summer (1980). Please rate the following types of experiences as to how much you feel they would either add to (+) or detract from (-) the level of satisfaction you would receive from engaging in that activity. If any items do not pertain to your visit please check 9, Not Applicable. Circle one number for each item.

Experiences	EFFECT ON SATISFACTION									
	ADDS TO					DETRACTS FROM				
	Most Strongly	Strongly	Moderately	Slightly	Neither Add Nor Detract	Slightly	Moderately	Strongly	Most Strongly	Not Applicable
1. Being away from civilization for awhile	+4	+3	+2	+1	0	-1	-2	-3	-4	9
2. Being out-of-doors	+4	+3	+2	+1	0	-1	-2	-3	-4	9
3. Learning more about the topography of the land	+4	+3	+2	+1	0	-1	-2	-3	-4	9
4. Avoiding the unexpected	+4	+3	+2	+1	0	-1	-2	-3	-4	9
5. Experiencing solitude	+4	+3	+2	+1	0	-1	-2	-3	-4	9
6. Viewing the scenic beauty	+4	+3	+2	+1	0	-1	-2	-3	-4	9
7. Sharing what you have learned with others	+4	+3	+2	+1	0	-1	-2	-3	-4	9
8. Having thrills	+4	+3	+2	+1	0	-1	-2	-3	-4	9
9. Talking to new and varied people	+4	+3	+2	+1	0	-1	-2	-3	-4	9
10. Using your equipment	+4	+3	+2	+1	0	-1	-2	-3	-4	9
11. Testing your abilities	+4	+3	+2	+1	0	-1	-2	-3	-4	9
12. Giving your mind a rest	+4	+3	+2	+1	0	-1	-2	-3	-4	9
13. Helping direct the activities of others	+4	+3	+2	+1	0	-1	-2	-3	-4	9
14. Discovering something new	+4	+3	+2	+1	0	-1	-2	-3	-4	9
15. Feeling isolated	+4	+3	+2	+1	0	-1	-2	-3	-4	9
16. Thinking about who you are	+4	+3	+2	+1	0	-1	-2	-3	-4	9
17. Learning more about nature	+4	+3	+2	+1	0	-1	-2	-3	-4	9
18. Being away from crowds of people	+4	+3	+2	+1	0	-1	-2	-3	-4	9
19. Thinking about good times you have had in the past	+4	+3	+2	+1	0	-1	-2	-3	-4	9
20. Talking to others about your equipment	+4	+3	+2	+1	0	-1	-2	-3	-4	9
21. Being near others who could help you if you need them	+4	+3	+2	+1	0	-1	-2	-3	-4	9
22. Showing others you can do it	+4	+3	+2	+1	0	-1	-2	-3	-4	9
23. Being sure of what will happen to you	+4	+3	+2	+1	0	-1	-2	-3	-4	9
24. Being with friends	+4	+3	+2	+1	0	-1	-2	-3	-4	9
25. Getting to know the lay of the land	+4	+3	+2	+1	0	-1	-2	-3	-4	9
26. Doing something with your family	+4	+3	+2	+1	0	-1	-2	-3	-4	9
27. Being on your own	+4	+3	+2	+1	0	-1	-2	-3	-4	9
28. Observing other people in the area	+4	+3	+2	+1	0	-1	-2	-3	-4	9
29. Being near considerate people	+4	+3	+2	+1	0	-1	-2	-3	-4	9
30. Learning what you are capable of	+4	+3	+2	+1	0	-1	-2	-3	-4	9









## Setting 3

Moderately remote, usually greater than 1/2 mile from roads.  
 Predominately unmodified natural environment of over 2,500 acres.  
 Little, but some concentration or evidence of other users.  
 Low user density providing few, but some, contacts with other users.  
 Managed with minimum on-site regulation of users.  
 A few facilities are provided for resource protection and safety of users.  
 Free of most resource uses which significantly disturb the natural environment.  
 Motorized use is allowed but generally restricted to 4-wheel drive vehicles and off-road motorcycles.

Like	Unimportant	Dislike
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Setting 4.

Some of area remote, some along roads.  
 Environment appears to be generally natural.  
 Moderate concentration of users occurs and there are noticeable evidences of other users.  
 Contacts with other users are expected, but not constant.  
 Managed with on-site regulation of users.  
 Rustic facilities available for resource protection and convenience and safety of users.  
 Resource uses like timbering and grazing might be evident.  
 Automobile use is allowed and common.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Setting 5

Area is along roads.  
 Environment is substantially modified from natural with some urban type developments.  
 Concentration of users is high and there are noticeable evidences of other users.  
 Contacts with other users are frequent.  
 Managed with on-site regulations of users.  
 Modern, high standard, and generally large facilities are provided for users.  
 Resource uses allowed include timbering, grazing, water development and tourist and shopping areas.  
 Automobile use is allowed and common.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Now please rate how favorable or unfavorable each of the 5 total recreation settings is for your activity in the Glenwood Springs Resource Area. Give us your overall evaluation of each of the 5 settings.

Setting	Very Favorable	Moderately Favorable	Slightly Favorable	Neither Favorable or Unfavorable	Slightly Unfavorable	Moderately Unfavorable	Very Unfavorable
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Section 5

People with different characteristics have different preferences, therefore we would appreciate your answering the following, more personal questions. All information will be kept confidential.

- What is your present age? \_\_\_\_\_ years
- Your sex? \_\_\_\_\_ Male \_\_\_\_\_ Female
- Marital status \_\_\_\_\_ Single \_\_\_\_\_ Married
- What is the highest level of education that you have completed? Please circle one.  
 Grade school      1   2   3   4   5   6   7   8  
 High school        9   10   11   12  
 College or  
 Technical school   13   14   15   16  
 Post Graduate      17   18   19   20   21   22
- What is the population of the community where you live?  
 (1) \_\_\_\_\_ 500,000 or more      (3) \_\_\_\_\_ 25,000-99,999      (5) \_\_\_\_\_ below 5,000  
 (2) \_\_\_\_\_ 100,000-499,999      (4) \_\_\_\_\_ 5,000-24,999      (6) \_\_\_\_\_ rural
- What is the zip code of your permanent address? \_\_\_\_\_

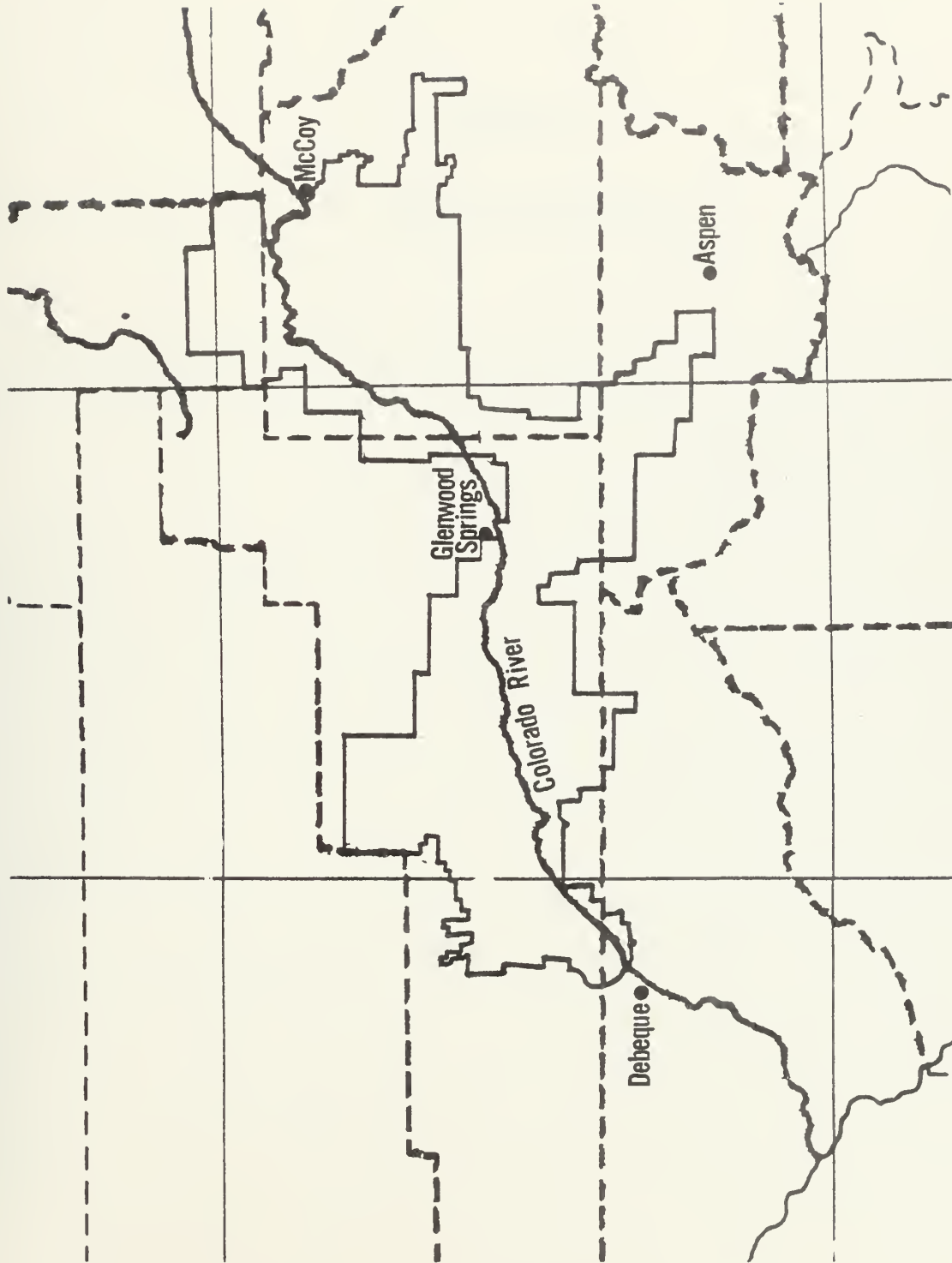
Thank you for your time and cooperation.

Sincerely,

David M. Ross  
 Research Assistant



Glenwood Springs Resource Area



Study area is within the area surrounded by the solid line.



APPENDIX D

ON-SITE QUESTIONNAIRE



Glenwood Springs Resource Area Fall Use Questionnaire

Section 1

Please check all of the activities you have engaged in during this visit to the Glenwood Springs Resource Area.

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> 1. Camping near auto         | <input type="checkbox"/> 11. Sightseeing                 | <input type="checkbox"/> 21. Prospecting-rock hounding   |
| <input type="checkbox"/> 2. Camping away from auto    | <input type="checkbox"/> 12. 4-wheel driving             | <input type="checkbox"/> 22. Hunting (deer)              |
| <input type="checkbox"/> 3. Hiking/walking on trails  | <input type="checkbox"/> 13. Motorcycling                | <input type="checkbox"/> 23. Hunting (elk)               |
| <input type="checkbox"/> 4. Hiking/walking off trails | <input type="checkbox"/> 14. Bicycling                   | <input type="checkbox"/> 24. Hunting (other)             |
| <input type="checkbox"/> 5. Rafting/tubing            | <input type="checkbox"/> 15. Horseback riding            | <input type="checkbox"/> 25. Auto-driving for recreation |
| <input type="checkbox"/> 6. Fishing (stream)          | <input type="checkbox"/> 16. Technical mountain climbing | <input type="checkbox"/> 26. Canoeing                    |
| <input type="checkbox"/> 7. Fishing (lake)            | <input type="checkbox"/> 17. Nature study                | <input type="checkbox"/> 27. Kayaking                    |
| <input type="checkbox"/> 8. Swimming/water play       | <input type="checkbox"/> 18. History study               | <input type="checkbox"/> 28. Other (specify) _____       |
| <input type="checkbox"/> 9. Sunbathing                | <input type="checkbox"/> 19. Photography                 | _____  |
| <input type="checkbox"/> 10. Picnicking               | <input type="checkbox"/> 20. Gathering forest products   | _____  |

Section 2

Which one activity among those you checked was most important to you as a reason for visiting this area? (Please circle the appropriate number.)

- |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |

Section 3

Different types of outdoor recreation opportunities provide users with different types of experiences. Managers of the Glenwood Springs Resource Area would like to know what adds to or detracts from the level of satisfaction you get from visiting this area. Because peoples' preferences differ for different activities the following questions should be answered with the one activity you circled as most important in mind. If any of the following items do not pertain to your visit please check 9, not applicable. Please circle one number for each item.

Experiences	EFFECT ON SATISFACTION									
	ADDS TO				Neither Add Nor Subtract	DETRACTS FROM				
	Most Strongly	Strongly	Moderately	Slightly		Slightly	Moderately	Strongly	Most Strongly	Not Applicable
1. Developing your skills and abilities	+4	+3	+2	+1	0	-1	-2	-3	-4	9
2. Being on your own	+4	+3	+2	+1	0	-1	-2	-3	-4	9
3. Gaining a sense of self-confidence	+4	+3	+2	+1	0	-1	-2	-3	-4	9
4. Testing and using your equipment	+4	+3	+2	+1	0	-1	-2	-3	-4	9
5. Experiencing excitement	+4	+3	+2	+1	0	-1	-2	-3	-4	9
6. Being with friends	+4	+3	+2	+1	0	-1	-2	-3	-4	9
7. Learning more about things here	+4	+3	+2	+1	0	-1	-2	-3	-4	9
8. Being in control of things that happen	+4	+3	+2	+1	0	-1	-2	-3	-4	9
9. Observing other people in the area	+4	+3	+2	+1	0	-1	-2	-3	-4	9
10. Keeping physically fit	+4	+3	+2	+1	0	-1	-2	-3	-4	9
11. Viewing the scenery	+4	+3	+2	+1	0	-1	-2	-3	-4	9
12. Experiencing more elbow room	+4	+3	+2	+1	0	-1	-2	-3	-4	9
13. Being close to nature	+4	+3	+2	+1	0	-1	-2	-3	-4	9
14. Resting physically	+4	+3	+2	+1	0	-1	-2	-3	-4	9
15. Doing something with your family	+4	+3	+2	+1	0	-1	-2	-3	-4	9
16. Avoiding the unexpected	+4	+3	+2	+1	0	-1	-2	-3	-4	9
17. Being away from the family for awhile	+4	+3	+2	+1	0	-1	-2	-3	-4	9
18. Feeling isolated	+4	+3	+2	+1	0	-1	-2	-3	-4	9

HUNTERS ONLY: Only people who are hunting in the Glenwood Springs Resource Area should respond to the following items. If you did not hunt please go to Section 4.

19. Challenging nature with my skills	+4	+3	+2	+1	0	-1	-2	-3	-4	9
20. Getting meat to eat	+4	+3	+2	+1	0	-1	-2	-3	-4	9
21. Testing hunting equipment	+4	+3	+2	+1	0	-1	-2	-3	-4	9
22. Outsmarting game	+4	+3	+2	+1	0	-1	-2	-3	-4	9
23. Showing game I have killed to my family and friends	+4	+3	+2	+1	0	-1	-2	-3	-4	9
24. Being knowledgeable about hunting equipment	+4	+3	+2	+1	0	-1	-2	-3	-4	9
25. Stalking game	+4	+3	+2	+1	0	-1	-2	-3	-4	9
26. Killing game	+4	+3	+2	+1	0	-1	-2	-3	-4	9
27. Being a well-equipped hunter	+4	+3	+2	+1	0	-1	-2	-3	-4	9





Section 4

A wide variety of recreation settings or environments can be provided by Resource Managers. Please read through the five settings described below.

- Setting 1: Large remote unmodified natural environment.  
Few other users and little evidence of them.  
Free of facilities and on-site regulation of users.  
Free of motorized vehicles and of resource uses which disturb the natural environment.
- Setting 2: Moderate to large fairly remote unmodified natural environment.  
Few other users but evidence of them exists.  
A few protective facilities with minimal on-site user regulations.  
Free of motorized vehicles and of most resource uses which disturb the natural environment.
- Setting 3: Moderate to large fairly remote unmodified natural environment.  
Few other users but evidence of them exists.  
A few protective facilities with minimal on-site user regulations.  
Road conditions limit use to 4-wheel drive and off-road motorcycles and no resource uses which disturb the natural environment.
- Setting 4: Some remote and some along roads natural environment with moderate evidence of man.  
Concentration of users is low to moderate and evidence of them is prevalent.  
Rustic facilities and on-site regulations are common.  
Automobile use and resource uses like timbering and grazing exist.
- Setting 5: Areas along roads with substantially modified natural environment.  
Large number of users and evidence of man is predominant.  
Numerous modern facilities and on-site regulations.  
Intense motorized vehicle use and resource use modifications like tourist and shopping areas allowed.

How favorable is each of these settings for your recreation activity in the Glenwood Springs Resource Area? Give us your overall evaluation of each of the five settings.

Setting	Very Favorable	Moderately Favorable	Slightly Favorable	Neither Favorable Nor Unfavorable	Slightly Unfavorable	Moderately Unfavorable	Very Unfavorable
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 4

People with different characteristics have different preferences, therefore we would appreciate your answering the following, more personal questions. All information will be kept confidential.

- What is your present age? \_\_\_\_\_ Years
- Your sex? \_\_\_\_\_ Male \_\_\_\_\_ Female
- Marital status \_\_\_\_\_ Single \_\_\_\_\_ Married
- What is the highest level of education that you have completed? Please circle one.

Grade school	1	2	3	4	5	6	7	8
High school	9	10	11	12				
College of Technical School	13	14	15	16				
Post Graduate	17	18	19	20	21	22		
- What is the population of the community where you live?
 

(1) _____ 500,000 or more	(3) _____ 25,000-99,999	(5) _____ below 5,000
(2) _____ 100,000-499,999	(4) _____ 5,000-24,999	(6) _____ rural
- What is the zip code of your permanent address? \_\_\_\_\_

THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION.

David M. Ross, Research Assistant  
Department of Recreation Resources  
Colorado State University  
Fort Collins, Colorado 80523  
(303) 491-7357



APPENDIX E

PSYCHOLOGICAL OUTCOME ITEMS



## PSYCHOLOGICAL OUTCOME ITEMS

Driver and Brown

### Domain A: Achievement

1. Reinforcing Self-Image  
(I) \*a. Gaining a sense of self-confidence.<sup>1</sup>  
(I) b. Developing a sense of self-pride.
2. Social Recognition  
(I) a. Having others think highly of you for doing it.  
(I) \*b. Showing others you can do it.
3. Skill Development  
(I) a. Becoming better at it.  
(I) \*b. Developing your skills and abilities.
4. Competence testing  
    \*a. Testing your abilities.  
    b. Learning what you are capable of.
5. Seeking Stimulation  
(I) a. Having thrills.  
    \*b. Experiencing excitement.

### Domain B: Leadership/Autonomy

1. Independence  
(I) a. Feeling your independence.  
(I) \*b. Being on your own.
2. Autonomy  
    \*a. Being your own boss.  
    b. Being free to make your own choices.
3. Control Power  
(I) a. Controlling things.  
(I) \*b. Being in control of things that happen.

---

<sup>1</sup>An (I) designates the item is a long-time core item from Driver's scale development work.

\* = item to use in one item scales.



4. Teaching-Sharing Skills
  - a. Teaching your outdoor skills to others.
  - (I) \*b. Sharing what you have learned with others.
5. Leading Others
  - (I) \*a. Helping direct the activities of others.
  - (I) b. Leading other people.

Domain C: Risk Taking

1. Risk Taking
  - a. Taking risks.
  - (I) \*b. Chancing dangerous situations.
2. Risk Moderation
  - \*a. Being near others who could help you if you need them.
  - b. Knowing others are nearby.
3. Risk Avoidance
  - a. Being sure of what will happen to you.
  - \*b. Avoiding the unexpected.

Domain D: Equipment

1. Equipment
  - (I) a. Using your equipment.
  - (I) b. Talking to others about your equipment.
  - \*c. Testing and using your equipment.

Domain E: Family Togetherness

1. Family Togetherness
  - (I) \*a. Doing something with your family.
  - (I) b. Bringing your family closer together.

Domain F: Being with People

1. Being with Friends
  - (I) a. Being with other members of your group.
  - \*b. Being with friends.
2. Being with Similar People
  - (I) \*a. Being with people who enjoy the same thing you do.
  - (I) b. Being with people having similar values.

Domain G: Meeting - Observing New People

1. Meeting New People
  - (I) \*a. Talking to new and varied people.
  - b. Meeting other people in the area.





2. Observing Other People
  - (I) a. Being with and observing other people using the area.
  - (I) \*b. Observing other people in the area.

Domain H: General Learning

1. General Learning
  - (I) a. Developing your knowledge of things there.
  - (I) \*b. Learning more about things there.
2. Exploration
  - (I) \*a. Experiencing new and different things.
  - b. Discovering something new.
3. Geography of Area
  - \*a. Getting to know the lay of the land.
  - b. Learning about the topography of the land.
4. Learn about Nature
  - (I) a. Studying nature.
  - (I) \*b. Learning more about nature.

Domain I: Relationships with Nature

1. Scenery
  - (I) \*a. Viewing the scenery.
  - (I) b. Viewing the scenic beauty.
2. General Nature Experience
  - (I) \*a. Being close to nature.
  - (I) b. Enjoying the sounds and smells of nature.

Domain J: Reflect on Personal Values

1. Spiritual
  - (I) \*a. Developing personal spiritual values.
  - (I) b. Growing and developing spiritually.
2. Introspection
  - (I) \*a. Thinking about your personal values.
  - (I) b. Thinking about who you are.

Domain K: Creativity

1. Creativity
  - (I) a. Being creative.
  - (I) \*b. Doing something creative, such as sketching, painting, photography, etc.



Domain L: Nostalgia

1. Nostalgia
  - (I) \*a. Thinking about good times you've had in the past.
  - (I) b. Bringing back pleasant memories.

Domain M: Exercise/Physical Fitness

1. Exercise/Physical Fitness
  - (I) a. Getting exercise.
  - (I) \*b. Keeping physically fit.

Domain N: Physical Rest

1. Physical Rest
  - (I) a. Relaxing physically.
  - (I) \*b. Resting physically.

Domain O: Escape Personal-Social Pressure

1. Tension Release
  - (I) a. Releasing clutched-up feelings.
  - (I) \*b. Releasing or reducing some built-up tensions.
2. Slow Down Mentally
  - (I) a. Having your mind move at a slower pace.
  - (I) \*b. Giving your mind a rest.
3. Escape Role Overloads
  - (I) \*a. Getting away from the usual demands of life.
  - (I) b. Avoiding everyday responsibilities for a while.
4. Escape Daily Routine
  - (I) \*a. Having a change from your daily routine.
  - (I) b. Having a change from your everyday life.

Domain P: Escape Physical Pressure

1. Tranquility
  - (I) \*a. Experiencing tranquility.
  - b. Experiencing solitude.
2. Privacy
  - \*a. Feeling isolated.
  - b. Being alone.
3. Escape Crowds
  - a. Being away from crowds of people.
  - \*b. Experiencing more elbow room.



4. Escape Physical Stressors

- (I) a. Getting away from the clatter and the racket.
- \*b. Being away from noise back home.

Domain Q: Security

1. Social Security

- (I) \*a. Being near considerate people.
- (I) b. Being with respectful people.

Domain R: Escaping Family

1. Escaping Family

- (I) \*a. Being away from the family for a while.



## APPENDIX F

### RECREATION OPPORTUNITY SPECTRUM CLASSES





The Outdoor Recreation Opportunity Spectrum, with associated activity opportunities, recreational setting requirements, and experience opportunities that are highly probable for each spectrum class. This is a table of general descriptors of the three components of the spectrum classes. There might be specific activity exceptions to these general characteristics.

Spectrum Class	Activity Opportunities	engaged in	Recreational Setting	to realize probable	Experience Opportunities
Primitive (P)					
Semi-Primitive Non-Motorized (SPNM)	Viewing Outstanding Scenery Enjoying Unique and/or Unusual Environments Hiking Cross-Country Skiing Horseback Riding Canoeing Sailing Other, Non-Motorized Watercraft Use Swimming Diving (skin or scuba) Fishing Photography Camping Snowplay Hunting (big, small game, upland birds and waterfowl) Nature Study Acquiring General Knowledge/Understanding Unaided Hiking General Information	Area is characterized by essentially unmodified natural environment of fairly large size. Concentration of users is very low and evidence of other area users is minimal. The area is managed to be essentially free from evidence of man-induced restrictions and controls. Only essential facilities for resource protection are used and are constructed of on-site materials. No facilities for comfort or convenience of the user are provided. Spacing of groups is informal and dispersed to minimize contacts with other groups or individuals. Motorized use within the area is not permitted.	Area is characterized by a predominantly unmodified natural environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other area users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Facilities are primarily provided for the protection of resource values and safety of users. On-site materials are used where possible. Spacing of groups may be formalized to disperse use and provide low-to-moderate contacts with other groups or individuals. Motorized use is not permitted.	Extremely high probability of experiencing considerable isolation from the sights and sounds of man, independence, closeness to nature, tranquility, and self-reliance through the application of wilderness skills in an environment that offers a high degree of challenge and risk.	High, but not extremely high, probability of experiencing the above listed natural environment elements.
Semi-Primitive Motorized (SPM)	Same as above, plus the following: Motor-Driven Ice and Snowcraft ORV Touring Power Boating	Area is characterized by a predominantly unmodified natural environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other area users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Facilities are primarily provided for the protection of resource values and safety of users. On-site materials are used where possible. Spacing of groups may be formalized to disperse use and provide low-to-moderate contacts with other groups or individuals. Motorized use is permitted.	Moderate probability of experiencing the above listed natural environment elements, except that there is a high degree of interaction with the natural environment. Explicit opportunity is available to use motorized equipment while in the area.		



(Cont.)

Spectrum Class	Activity Opportunities	engaged in	Recreational Setting	to realize probable	Experience Opportunities
Roaded Natural (RN)	<p>All of the activities mentioned in above classes, except the first two in P and SPNW, plus the following:</p> <ul style="list-style-type: none"> <li>Picnicking</li> <li>Gathering Forest Products</li> <li>Auto Touring</li> <li>Water Skiing and Other Water Sports</li> <li>Automobile Camping</li> <li>Trailer Camping</li> <li>Viewing Interpretive Signs</li> <li>Organization Camping</li> <li>Lodges</li> <li>Power Boating</li> <li>Resort-Commercial Public Services</li> <li>Resort-Lodging</li> </ul>	<p>Area is characterized by predominantly natural environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Concentration of users may be low to moderate with facilities sometimes provided for group activity. Evidence of other users is prevalent. Controls and regimentation offer a sense of security and are on-site. Rustic facilities are provided for convenience of the user as well as for safety and resource protection. Moderate densities of groups are provided for in developed sites and on roads and trails. Low-to-moderate densities prevail away from developed sites and facilities. Renewable resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.</p>	<p>About equal probability to experience affiliation with other user groups and for isolation from sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities associated with more primitive type of recreation are not very important. Practice and testing of outdoor skills might be important. Opportunities for both motorized and non-motorized forms of recreation are possible.</p>		
Rural (R)	<ul style="list-style-type: none"> <li>Competition Games</li> <li>Ice Skating</li> <li>Scooter-Motorcycle Use</li> <li>Bicycling</li> <li>Spectator Sports</li> <li>Jogging</li> <li>Passive Use of Developed Parks and Open Space</li> <li>Picnicking</li> <li>Outdoor Concerts</li> </ul>	<p>Area is characterized by substantially modified natural environment. Renewable resource modification and utilization practices are primarily to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of man are readily evident, and the concentration of users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate to high densities of groups and individuals are provided for in developed sites, on roads and trails, and water surfaces. Moderate densities are provided for from developed sites. Facilities for intensified motorized use and parking are available.</p>	<p>Probability for experiencing affiliation with individuals and groups is prevalent as is the convenience of sites and opportunities. These factors are generally more important than the setting of the physical environment. Opportunities for wilderness challenges, risk-taking, and testing of outdoor skills are generally unimportant except for specific activities such as downhill skiing, for which challenge and risk-taking are important elements.</p>		
Modern-Urban (MU)	<ul style="list-style-type: none"> <li>Jogging</li> <li>Passive Use of Developed Parks and Open Space</li> <li>Picnicking</li> <li>Outdoor Concerts</li> </ul>	<p>Area is characterized by a substantially urbanized environment, although the background may have natural elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Soil protection usually accomplished with hand surfacing and terracing. Sights and sounds of man, on-site, are predominant. Large numbers of users can be expected, both on-site and in nearby areas. A considerable number of facilities are designed for the use and convenience of large numbers of people and include electrical hookups and contemporary sanitation services. Controls and regimentation are obvious and numerous. Facilities are provided for special activities. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.</p>	<p>Probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Experience natural environments, having challenges and risks afforded by the natural environment, and the use of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly man-influenced parks and open spaces are common.</p>		



APPENDIX G

HIGH PARTICIPATION PROJECTIONS



Recreation participation projections assuming a high population growth scenario and three supply growth assumptions for the Glenwood Springs Resource Area (base year 1977 = 100).<sup>1</sup>

Activity	Year	Supply Growth Per Year		
		0%	2%	5%
Developed Camping	1980	105	107	109
	1985	113	117	125
	1990	121	129	141
	2000	141	159	187
Primitive Camping	1980	104	105	107
	1985	110	115	120
	1990	115	122	133
	2000	127	144	169
Canoeing	1980	108	109	110
	1985	121	124	128
	1990	135	140	147
	2000	173	185	202
Sailing	1980	109	111	113
	1985	127	132	137
	1990	145	153	164
	2000	198	216	240
Water Skiing	1980	107	107	108
	1985	119	120	122
	1990	128	130	135
	2000	161	168	177
Fishing	1980	104	104	104
	1985	111	111	112
	1990	118	118	119
	2000	138	138	139
Outboard Boating	1980	107	107	108
	1985	120	122	124
	1990	133	136	140
	2000	171	177	186
Swimming	1980	106	106	107
	1985	115	117	119
	1990	123	127	131
	2000	151	158	168
Nature Walking	1980	106	106	107
	1985	119	119	120
	1990	131	132	133
	2000	162	164	169





Activity	Year	Supply Growth Per Year		
		0%	2%	5%
Backpacking	1980	106	106	107
	1985	115	117	119
	1990	123	127	131
	2000	148	156	166
Bicycling	1980	105	105	106
	1985	114	115	116
	1990	124	125	127
	2000	151	154	159
Horseback riding	1980	105	106	107
	1985	114	116	119
	1990	122	125	131
	2000	146	155	168
ORVing	1980	105	105	106
	1985	115	116	117
	1990	125	126	128
	2000	149	152	155
Hunting	1980	104	104	105
	1985	110	111	113
	1990	114	117	121
	2000	127	132	140
Picnicking	1980	105	105	106
	1985	114	115	117
	1990	124	126	128
	2000	148	152	159
Downhill Skiing	1980	108	110	113
	1985	123	128	137
	1990	135	147	163
	2000	176	201	238
Snowmobiling	1980	104	105	107
	1985	108	112	118
	1990	113	120	129
	2000	121	136	158
Sightseeing	1980	106	106	106
	1985	118	118	119
	1990	131	131	132
	2000	164	165	167



Activity	Year	Supply Growth Per Year		
		0%	2%	5%
Outdoor walking	1980	106	106	106
	1985	114	115	116
	1990	124	125	127
	2000	150	153	156
Cross Country Skiing	1980	106	108	111
	1985	117	123	132
	1990	126	138	154
	2000	152	178	217
Ice Skating	1980	106	107	109
	1985	116	120	125
	1990	125	132	141
	2000	153	176	189
Sledding	1980	105	106	108
	1985	113	117	122
	1990	118	125	135
	2000	138	153	176
Pleasure Driving	1980	105	105	106
	1985	115	115	116
	1990	126	127	128
	2000	152	154	157

<sup>1</sup>Values are index values with a base of 100 at year 1977. They indicate that participation will increase by a given percentage over 1977. For instance, participation in developed camping with no increase in supply will increase by 13 percent in 1985, 21 percent in 1990, and 41 percent in 2000 from 1977 participation. Calculations were made using the USDA Forest Service RPA projection model developed at Colorado State University.

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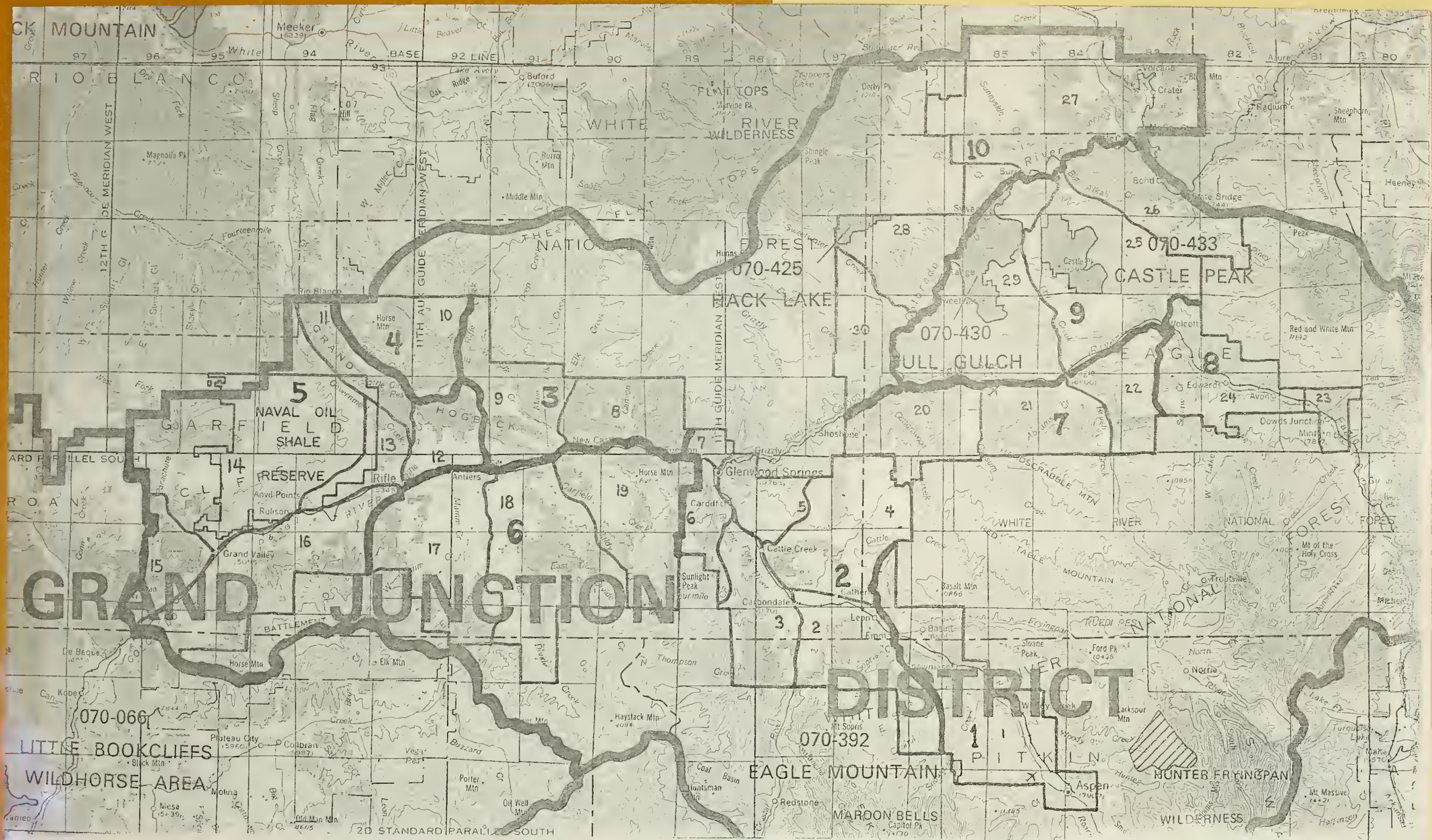
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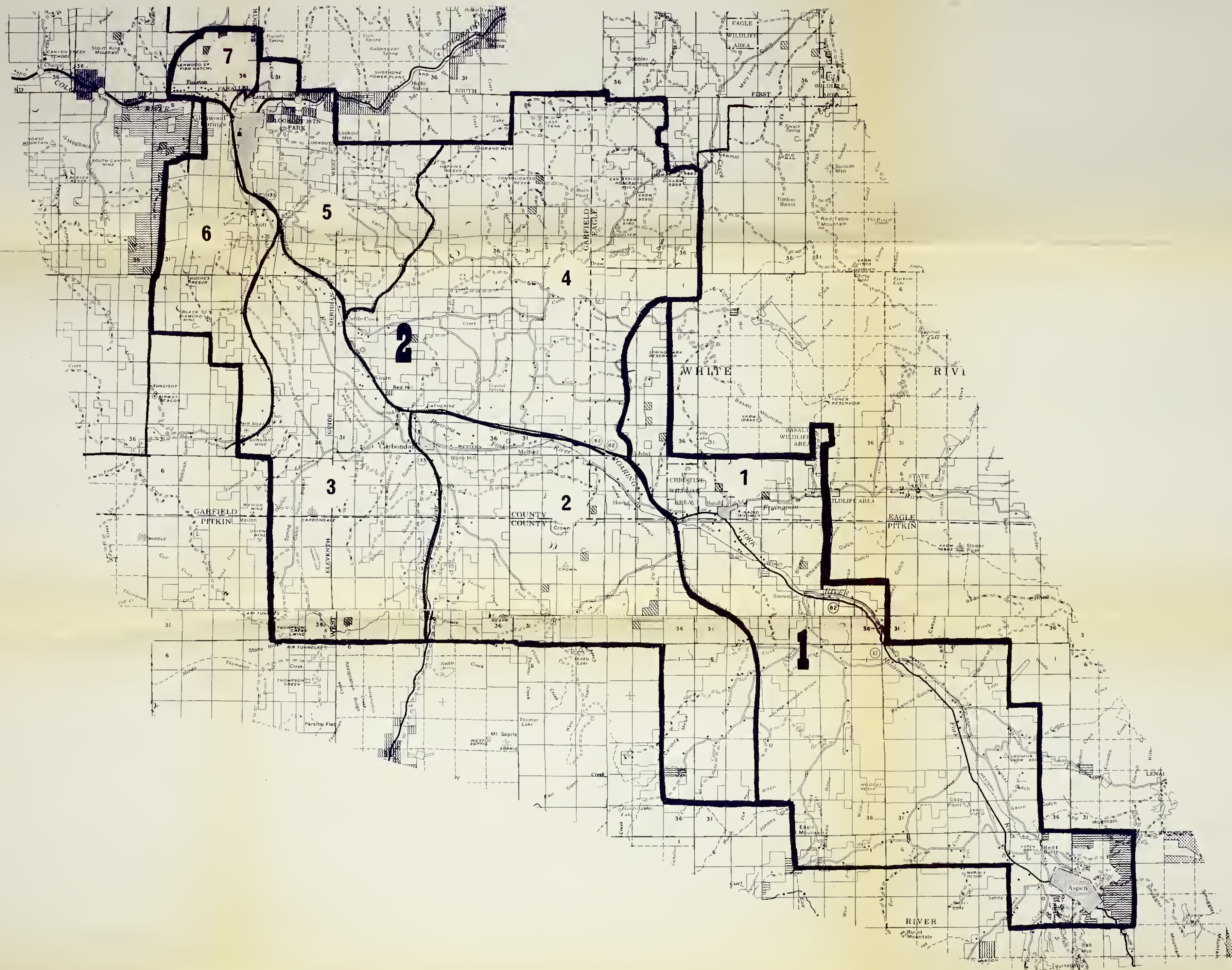
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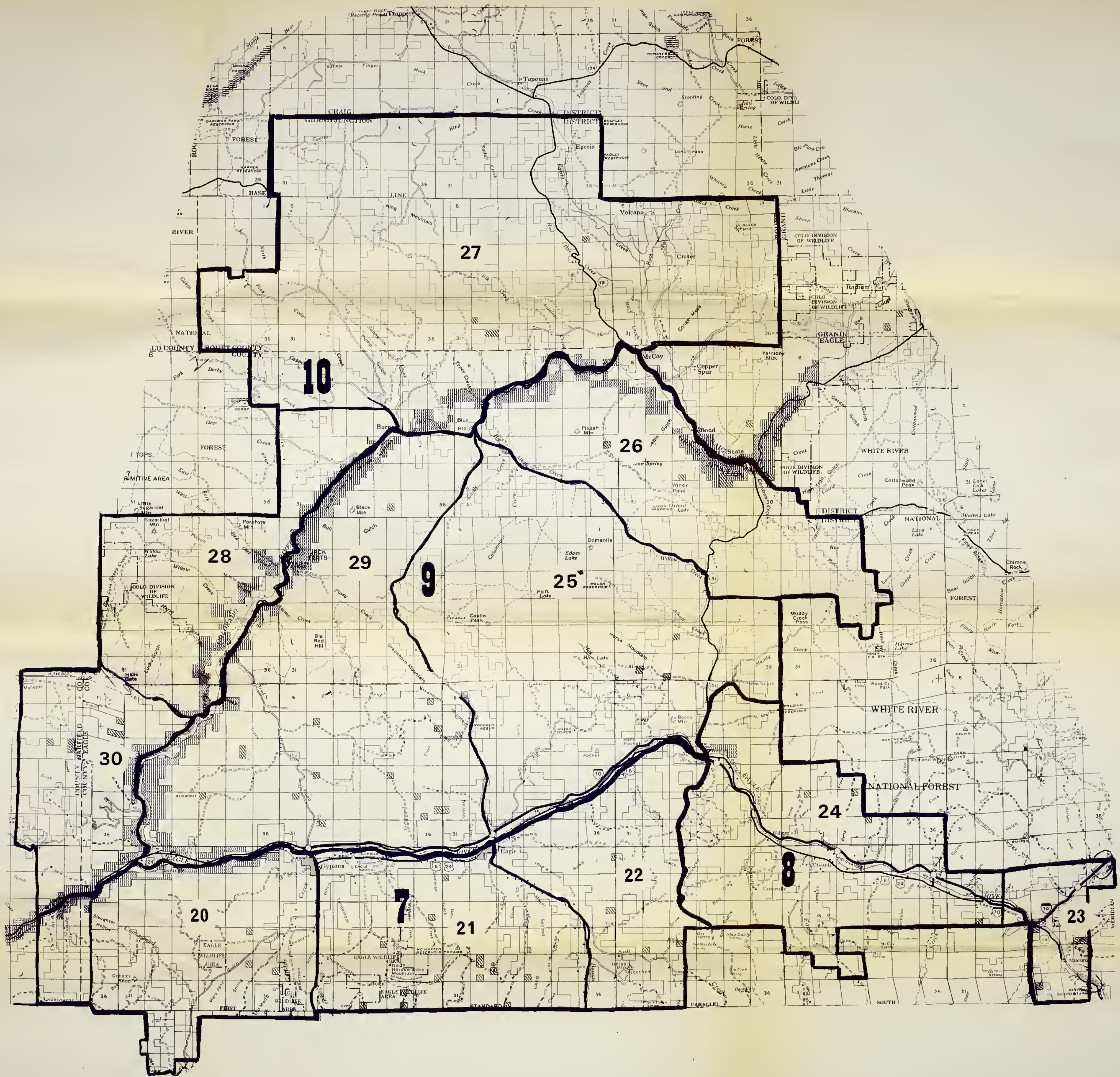
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